Mini Component System 70FW2019/20/21/25

Service
Service
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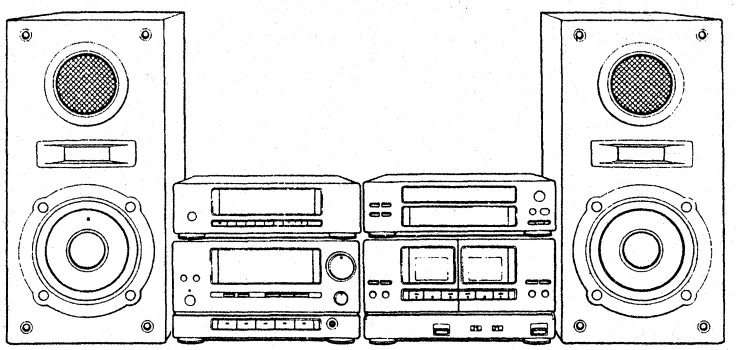

Service Manual

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

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SPECIFICATION

Note :
The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

Tuner

Frequency range	FM : 87.5 - 108 MHz MW : 522 - 1,611 kHz LW : 144 - 290 kHz
Sensitivity	FM : 1.8μV (mono)
Dimensions(approx.)	220 (W) × 65 (H) × 250 (D) mm
Weight(approx.)	1.4 kg

Amplifier

Output power	25W × 2 (0.9% THD)
Inputs/outputs	Audio input × 2 Audio output × 1 Video input × 1 Video output × 1
Graphic equalizer	7 band electronic
Spectrum analyzer	7 band
Dimensions(approx.)	220 (W) × 120 (H) × 250 (D) mm
Weight(approx.)	4.65 kg

Cassette decks

Track system	4-track, 2-channel stereo
Frequency response	Metal tapes : 40 - 15,000 Hz Chrome tapes : 40 - 14,000 Hz Normal tapes : 40 - 13,000 Hz
Signal to noise ratio	60 dB(with DOLBY NR : ON)
Wow and flutter	0.12% (WRMS)
Fast forward / rewind time	Approx. 110 sec. (C-60)
Dimensions(approx.)	220 (W) × 120 (H) × 250 (D) mm
Weight(approx.)	2.5 kg

CD player

Channels	2-channel stereo
Sampling frequency	44.1 kHz
Pick-up	Optical 3-beam semiconductor laser
Frequency response	5 - 20,000 Hz
Wow and flutter	Below measurable limits
Dimensions(approx.)	220 (W) × 65 (H) × 250 (D) mm
Weight(approx.)	1.75 kg

General

Power requirements	AC : 230V(115V), 50Hz
Power consumption	115W

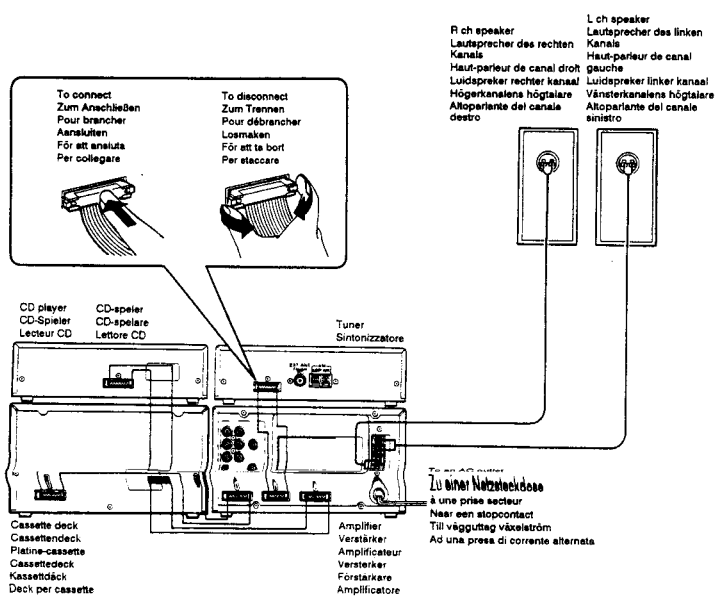
Speaker systems

Overall frequency response	40 - 20,000Hz
Type	2 Way bass reflex
Unit used	Woofer : 13 cm cone type Tweeter : 5cm cone type
Power handling capacity ..	70W (peak)
Nominal impedance	6 ohms
Dimensions(approx.)	185 (W) × 370 (H) × 260 (D) mm
Weight(approx.)	4.9 kg (Per sperker)

Note :
The POWER switch is mounted on the secondary side. The unit is not disconnected from AC-power, even when switched off.

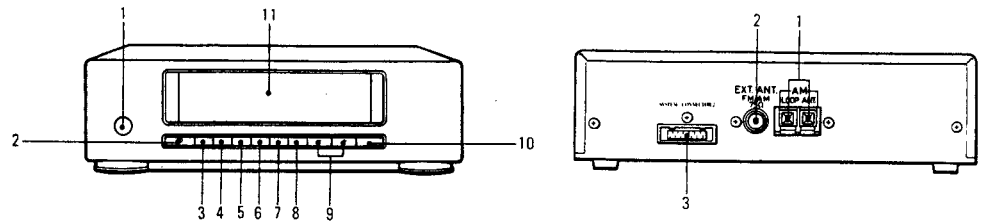
Specification subject to change without notice.

SYSTEM CONNECTION



CONNECTIONS & CONTROLS

TUNER / (TIMER)



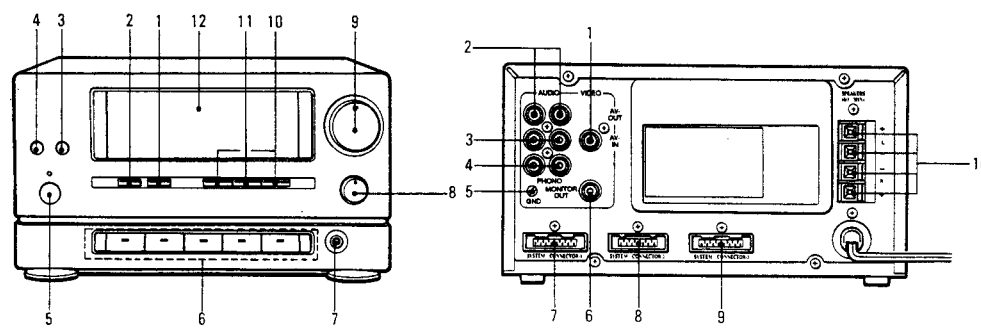
CONTROLS

1. Remote sensor (REMOTE SENSOR)
2. Clock switch (CLOCK)
3. Wake-up switch (WAKE UP)
4. Sleep switch (SLEEP)
5. Timer switch (TIMER)
6. Set switch (SET)
7. Clear switch (CLEAR)
8. Memory switch (MEMO) (TUNE / TIME / SOURCE controls)
9. Down / Up switches (- / +)
10. Band select switch (BAND)
11. Display

CONNECTIONS

1. AM AERIAL TERMINALS
2. FM AERIAL TERMINAL
3. SYSTEM CONNECTOR (SYSTEM CONNECTOR - 2)

AMPLIFIER



CONTROLS

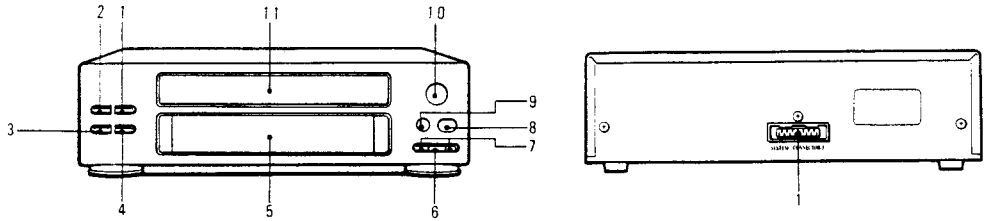
1. Surround switch / indicator (SURROUND)
2. Dynamic bass switch / indicator (DYNAMIC BASS)(SOUND STYLE controls)
3. Programmed switch (PROGRAMED)
4. Preset switch (PRESET)
5. Power switch and indicator (POWER)
6. Function switches and indicator (TAPE / TUNER / CD / PHONO / AV)
7. Headphone socket (PHONES)
8. Balance control (BALANCE)
9. Volume control and indicator(VOLUME) (GRAPHIC EQUALIZER controls)
10. Down / Up switches (▽ / △)
11. Frequency / Memory switch (FREQ / MEMO)
12. Display

CONNECTIONS

1. Video input terminal (AV - IN)
2. Audio output terminals (AV)
3. Audio input terminals (AV)
4. Phono terminals (PHONO)
5. Ground terminal (GND)
6. Monitor terminal (MONITOR OUT)
7. Connector-1 (SYSTEM CONNECTOR - 1)
8. Connector-2 (SYSTEM CONNECTOR - 2)
9. Connector-3 (SYSTEM CONNECTOR - 3)
10. Speaker terminals (SPEAKERS)

CONNECTIONS & CONTROLS

CD PLAYER



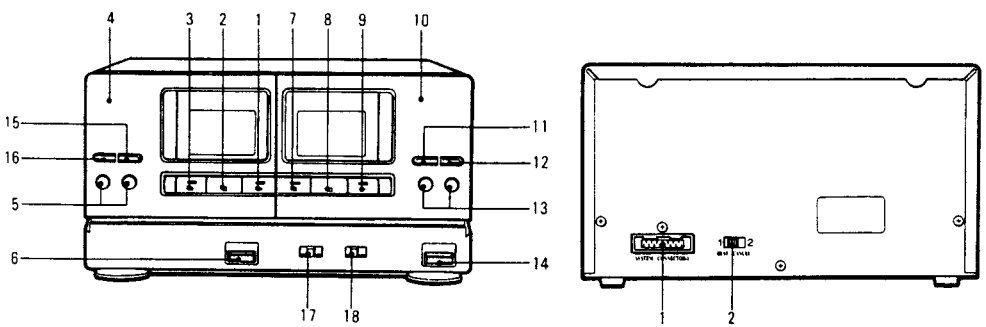
CONTROLS

1. Edit switch (EDIT)
2. Computer recording switch / indicator (COMPU REC)
3. Time edit switch / indicator (TIME EDIT)
4. Fade edit switch / indicator (FADE EDIT)
5. Display
6. Memory switch (MEMO)
7. Skip / Search switches (SKIP / SEARCH)
8. Play / Pause switch (PLAY / PAUSE)
9. Stop switch (STOP)
10. Disc tray open / close switch (OPEN / CLOSE)
11. Disc tray

CONNECTIONS

1. System connector (SYSTEM CONNECTOR - 3)

CASSETTE DECK



CONTROLS

Deck A section

1. Forward play switch and indicator (F.PLAY)
2. Stop switch (STOP)
3. Reverse play switch and indicator (R.PLAY)
4. Cassette holder
5. Fast forward and rewind / AMS switches (AMS)
6. Eject button (EJECT)

Deck B section

7. Reverse play switch and indicator (R.PLAY)
8. Stop switch (STOP)
9. Forward play switch and indicator (F.PLAY)
10. Cassette holder
11. Record / Record pause switch and indicator(REC PAUSE)
12. Record muting switch (REC MUTE)
13. Fast forward and rewind / AMS switches (AMS)
14. Eject button (EJECT)

Deck A / B section

(DUBBING controls)

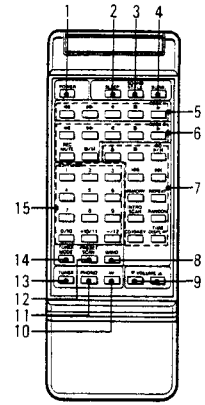
15. High speed switch / indicator (HIGH)
16. Normal speed switch / indicator (NORMAL)
17. Reverse mode switch (REVERS MODE)
18. Dolby noise reduction switch (DOLBY NR)

CONNECTIONS

1. System connector (SYSTEM CONNECTOR - 1)
2. Beat cancel switch (BEAT CANCEL)

CONNECTIONS & CONTROLS

REMOTE CONTROLLER



CONTROLS

1. Power switch (POWER)
2. Sleep switch (SLEEP)
3. Sound style switch (SOUND STYLE)
4. Surround switch (SURR.)
5. Deck A controls
   - ◀ : Reverse play switch
   - ▶ : Forward play switch
   - ◀◀ ▶▶ : Fast forward and rewind switches
   - ■ : Stop switch
6. Deck B controls
   - ■ : Stop switch
   - ◀ : Reverse play switch
   - ▶ : Forward play switch
   - ◀◀ ▶▶ : Fast forward and rewind switches
   - REC MUTE : Record muting switch
   - ● / ❚❚ : Record / Record pause switch
7. CD player controls
   - ▲ : Disc tray open / close switch (OPEN / CLOSE)
   - ▶ / ❚❚ : Play / Pause switch
   - ■ : Stop switch
   - ⏮⏭ : Skip / Search switches
   - MEMORY : Memory switch
   - TIME DISPLAY : Time display switch
   - INTRO SCAN : Intro scan switch
   - RANDOM : Random switch
   - REPEAT : Repeat switch
   - CD 10KEY : CD 10 - key switch
8. Band select switch (BAND)
9. Volume controls (VOLUME)
10. AV switch (AV)
11. Phono switch (PHONO)
12. Scan switch (PRESET SCAN)
13. Tuner switch (TUNER)
14. FM mode switch (TUNER MODE)
15. CD player / Tuner controls
    - 0 (0 / 10) -9, +10 (+10 / 11) : Number switches (for CD player)
    - 1 - 12 (-/12) : Number switches (for Tuner)

PARTS LIST (ACCESSORIES)

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION : Regular type resistors and capacitors are not list. To know those values, refer to the schematic diagram.

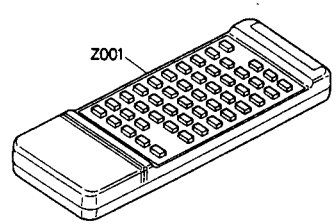
ACCESSORIES

REF. NO.	PART NO.	DESCRIPTION
(001T)	4822 736 21175	INSTRUCTION MANUAL
	4822 267 31371	CONNECTOR, 15P, BLACK
	4822 267 31372	CONNECTOR, 13P, BLACK
	4822 267 31373	CONNECTOR, 15P, BLUE

REF. NO.	PART NO.	DESCRIPTION
	4822 303 50062	ANT, FM
	4822 303 30402	LOOP ANT, AM
	4822 403 70436	HOLDER, AM ANT
	4822 502 30673	SCREW WOOD 3.1 x 13

REMOTE CONTROLLER UNIT

EXPLODED VIEW & PARTS LIST



REMOCON(RB-FW2019)

REF. NO.	PART NO.	DESCRIPTION
Z001	4822 218 10414	ASSY, REMOCON

TUNER UNIT

TUNER ADJUSTMENT

- Use a plastic screwdriver for adjustment.
- Adjust the intermediate frequency of AM and FM to the frequency of ceramic filter.

1. CLOCK

STEP	ITEMS	OUTPUT CONDITION		PARTS	STANDARDS
		MEASURE	OUTPUT		
1	CLOCK	Frequency Counter	IC242 Pin 33(H) Earth(E)	CT241	1.048576MHz (20°C)

① Short the IC242 pin 40 and D2048 anode at power off.
② Output the clock signal for adjustment.
③ Clock signal for adjustment delete at power on.

Temperature drift
10°C : about +1.5Hz, 30°C : about -2.5Hz, 40°C : about -5Hz,

2. FM BAND

SG RF Level : 75 ohm Open voltage
Antenna : 75 ohm Direct, Modulation : 1kHz, Dev. : ±75kHz (mono/stereo) · ±67.5kHz (main) · ±6.75kHz(pilot)

STEP	ITEMS	TUNING FREQUENCY	INPUT CONDITION		OUTPUT CONDITION		PARTS	STANDARDS
			MEASURE	INPUT	MEASURE	OUTPUT		
1	COVER	108.0MHz	------	------	Digital Voltmeter	TP241(H) TP232(E)	------	Confirm ≦ 8.0V
2	IF(0V)	98.0MHz (66dB)	FM SG	ANT TERMINAL	Digital Voltmeter	TP221(H) #TP222(E)	T2202	0 ± 0.05V
3	VCO	98.0MHz (66dB)	FM SG	ANT TERMINAL	Frequency Counter	TP231(H) TP232(E)	SVR23	##19KHz ± 50Hz
4	SEPARATION	98.0MHz (66dB)	FM SG	ANT TERMINAL	VTVM Oscilloscope	TP233(L) TP234(R) TP235(E)	SVR24	L-R · R-L : Minimum DEV(MAIN) = ± 40kHz
5	SD (Auto Stop)	98.0MHz (26dB)	FM SG	ANT TERMINAL	Digital Voltmeter	TP223(H) TP232(E)	SVR21	1~3V

: TP222 is no earth point. ## : Adjust in the modulation off after the stereo indicator light on.

3. MW BAND

Antenna : IRE Loop, Modulation : 400Hz 30%

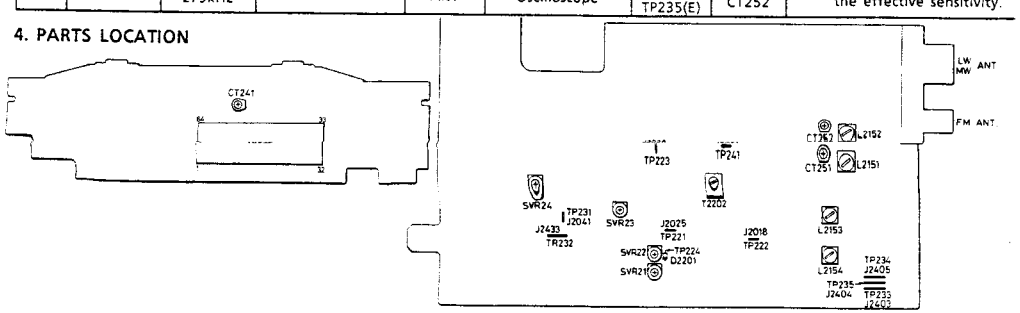
STEP	ITEMS	TUNING FREQUENCY	INPUT CONDITION		OUTPUT CONDITION		PARTS	STANDARDS
			MEASURE	INPUT	MEASURE	OUTPUT		
1	COVER	522kHz 1611kHz	------	------	Digital Voltmeter	TP241(H) TP232(E)	L2153 ------	1.2 ± 0.05V Confirm ≦ 8.0V (about 7.6V)
2	TRACKING	603kHz 1404kHz	AM SG	LOOP ANT	VTVM Oscilloscope	TP233(L) TP234(R) TP235(E)	L2151 CT251	Output : Maximum Adjust to near the effective sensitivity.
3	SD (Auto Stop)	999kHz (85dB)	AM SG	LOOP ANT	Digital Voltmeter	TP223(H) TP232(E)	SVR22	1~3V

4. LW BAND

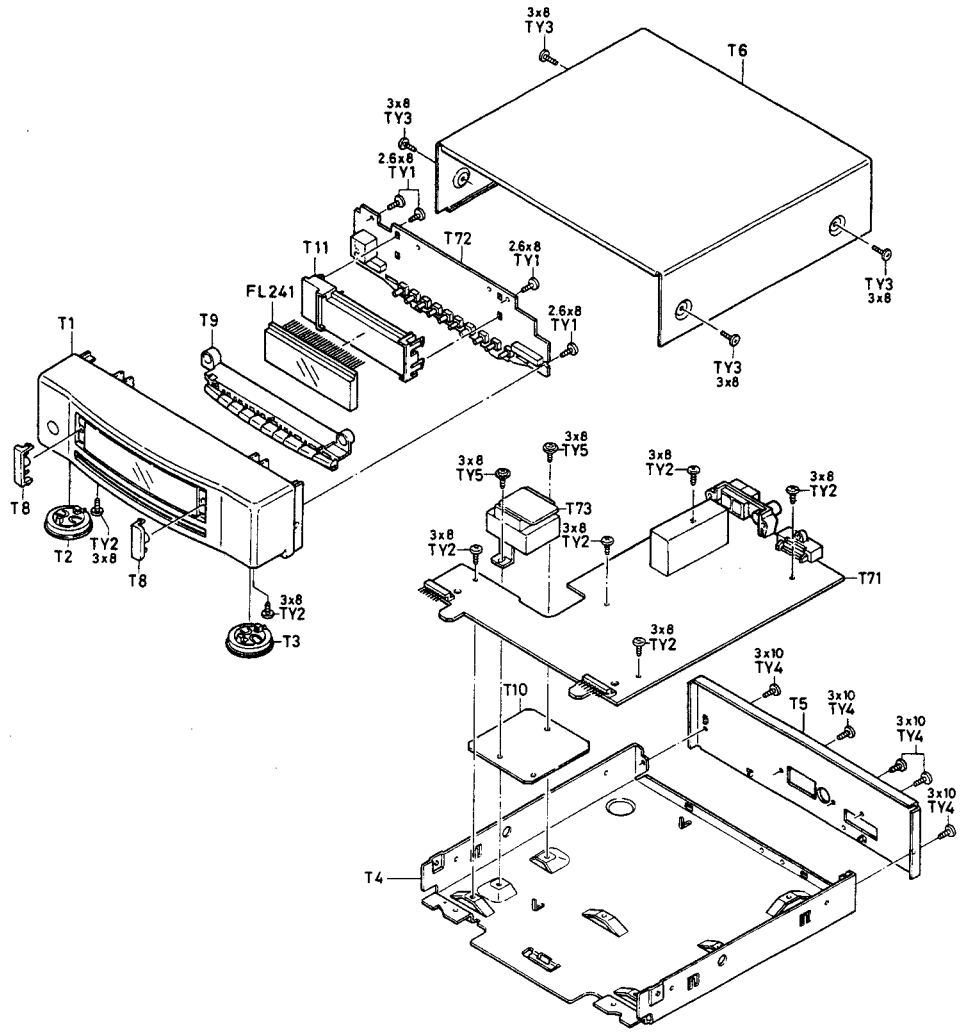
Antenna : IRE Loop, Modulation : 400Hz 30%

STEP	ITEMS	TUNING FREQUENCY	INPUT CONDITION		OUTPUT CONDITION		PARTS	STANDARDS
			MEASURE	INPUT	MEASURE	OUTPUT		
1	COVER	144kHz 290kHz	------	------	Digital Voltmeter	TP241(H) TP232(E)	L2154 ------	1.6 ± 0.05V Confirm ≦ 8.0V (about 7.2V)
2	TRACKING	162kHz 279kHz	AM SG	LOOP ANT	VTVM Oscilloscope	TP233(L) TP234(R) TP235(E)	L2152 CT252	Output : Maximum Adjust to near the effective sensitivity.

4. PARTS LOCATION



EXPLODED VIEW (TUNER)



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
T1	4822 426 51499	ASSY, PANEL, FRONT	T8	4822 459 80735	ESCUTCHEON, WINDOW FIX
T2	4822 462 41839	ASSY, FOOT, FRONT-L	T9	4822 410 61439	BUTTON, OPERATION
T3	4822 462 41841	ASSY, FOOT, FRONT-R	TY5	4822 502 13808	SPECIAL SCREW 3 x 8

PARTS LIST (TUNER)

REF. NO.	PART NO.	DESCRIPTION
T71		ASSY, PCB, NAIN
CF221	4822 242 80305	IF FILTER, 10.7MHZ, FM
CF222	4822 242 80305	IF FILTER, 10.7MHZ, FM
CF223	4822 242 80305	IF FILTER, 10.7MHZ, FM
CF224	4822 242 80306	FILTER, 459KHZ, AM
CF225	4822 242 80307	FILTER, 459KHZ, AM
CN101	4822 290 61034	TERMINAL, EXT ANT
CN240	4822 290 61035	SOCKET, 13P, TO AMP UNIT
CT251	4822 125 60173	TRIMMER, 11PF, WHITE, MW
CT252	4822 125 60174	TRIMMER, 30PF, GRAY, LW
D2151	4822 130 31542	VARACTOR DIODE, SVC321SPA-C-2
D2152	4822 130 31542	VARACTOR DIODE, SVC321SPA-C-2
D2201	4822 130 82633	DIODE, GMA01
D2301	4822 130 82633	DIODE, GMA01
D2302	4822 130 82633	DIODE, GMA01
D2401	4822 130 82633	DIODE, GMA01
D2410	4822 130 82633	DIODE, GMA01
D2411	4822 130 82634	DIODE, DS442X
⚠ D2901	4822 130 32508	DIODE, DSF10C
⚠ D2902	4822 130 32508	DIODE, DSF10C
⚠ D2903	4822 130 32508	DIODE, DSF10C
D2905	4822 130 82635	ZENER DIODE, GZS33Y
⚠ D2907	4822 130 82636	ZENER DIODE, MTZ-6.2C
D2908	4822 130 82637	ZENER DIODE, MTZ-4.7C
IC221	4822 209 30151	IC, LA1265S
IC231	4822 209 63077	IC, LA3361
IC241	4822 209 30152	IC, LM7001
⚠ IC291	4822 209 30153	IC, L78M12ML, L7812ML
L2121	4822 157 63448	VHF COIL, FM
L2122	4822 157 63448	VHF COIL, FM
L2151	4822 157 63352	ANT COIL, MW
L2152	4822 157 63353	TRANS COIL, LW
L2153	4822 157 63358	OSC COIL, MW
L2154	4822 157 63359	OSC COIL, LW
L2201	4822 157 63355	FILTER, ANT BIAS
Q2103	4822 130 61931	TR 2SC2999-E-SPA
Q2151	4822 130 60945	TR 2SC3330-T, U
Q2152	4822 130 60948	TR 2SD1012-G-SPA
Q2153	4822 130 60948	TR 2SD1012-G-SPA
Q2154	4822 130 60948	TR 2SD1012-G-SPA
Q2155	4822 130 60948	TR 2SD1012-G-SPA
Q2156	4822 130 60948	TR 2SD1012-G-SPA
Q2157	4822 130 62767	TR FET 2SK222-D
Q2158	4822 130 60945	TR 2SC3330-T, U
Q2201	4822 130 43298	TR 2SC2839-E
Q2202	4822 130 60945	TR 2SC3330-T, U
Q2203	4822 130 60944	TR 2SA1317-T
Q2301	4822 130 60945	TR 2SC3330-T, U
Q2302	4822 130 60945	TR 2SC3330-T, U
Q2351	4822 130 60944	TR 2SA1317-T
Q2352	4822 130 60945	TR 2SC3330-T, U
Q2353	4822 130 60948	TR 2SD1012-G-SPA
Q2354	4822 130 60948	TR 2SD1012-G-SPA
Q2403	4822 130 62754	TR 2SA1318-T
Q2404	4822 130 62754	TR 2SA1318-T
Q2405	4822 130 62754	TR 2SA1318-T

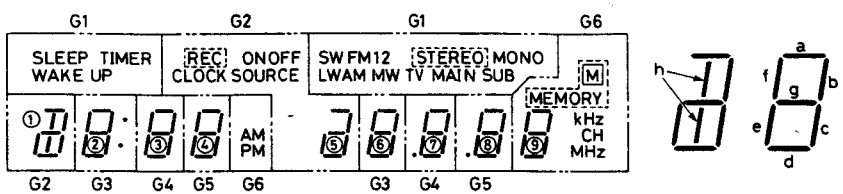
REF. NO.	PART NO.	DESCRIPTION
Q2431	4822 130 41925	TR 2SC1571-F-NP
Q2432	4822 130 41925	TR 2SC1571-F-NP
⚠ Q2902	4822 130 60754	TR 2SC3331-T
Q2951	4822 130 60945	TR 2SC3330-T
⚠ R2407	4822 111 30006	CARBON 47 JB 1/4W, FLAME PROOF
⚠ R2902	4822 111 90725	CARBON 330 JB 1/4W, FLAME PROOF
⚠ R2911	4822 111 41197	CARBON 33 JB 1/4W, FLAME PROOF
RX101	4822 210 10434	TUNER, FM-RF
SVR21	4822 100 11762	SEMI-FIXED VR, 22K (B)
SVR22	4822 100 11759	SEMI-FIXED VR, 10K (B)
SVR23	4822 100 11759	SEMI-FIXED VR, 10K (B)
SVR24	4822 100 11758	SEMI-FIXED VR, 1K (B)
T2202	4822 148 81179	IFT, 10.7MHZ, FM
T2203	4822 157 63361	MX COIL, FTZ
T2301	4822 157 63356	CHOCK COIL, 19KHZ, TRAP
T2302	4822 157 63356	CHOCK COIL, 19KHZ, TRAP
X2401	4822 242 80312	CRYSTAL, 7.2MHZ, FOR IC241

REF. NO.	PART NO.	DESCRIPTION
T72		ASSY, PCB, FRONT
T11	4822 403 70434	MOUNT-E, FL
CT241	4822 125 60174	TRIMMER, 30PF, CLOCK
D2402	4822 130 82633	DIODE, GMA01
D2403	4822 130 82633	DIODE, GMA01
D2404	4822 130 82633	DIODE, GMA01
D2405	4822 130 82633	DIODE, GMA01
D2406	4822 130 82633	DIODE, GMA01
D2407	4822 130 82634	DIODE, GMA01
D2408	4822 130 82633	DIODE, GMA01
D2420	4822 130 82634	DIODE, GMA01
FL241	4822 130 91011	FLUORESCENT TUBE, DISPLAY
IC242	4822 209 30163	IC HD404728A34S
L2401	4822 157 63357	FILTER, CHOCK(RIPPLE)
Q2451	4822 130 60944	TR 2SA1317-T
RA241	4822 111 91396	RESISTOR 100K x5
S2401	4822 276 13125	SWITCH, TACT, CLEAR
S2402	4822 276 13125	SWITCH, TACT, SLEEP
S2403	4822 276 13125	SWITCH, TACT, WAKE-UP
S2404	4822 276 13125	SWITCH, TACT, TIMER
S2405	4822 276 13125	SWITCH, TACT, CLOCK
S2406	4822 276 13125	SWITCH, TACT, BAND
S2407	4822 276 13125	SWITCH, TACT, SET
S2408	4822 276 13125	SWITCH, TACT, MEMORY
S2409	4822 276 13125	SWITCH, TACT, UP
S2410	4822 276 13125	SWITCH, TACT, DOWN
S2441	4822 130 82644	PHOTO DIODE, SPS-420-1
X2402	4822 242 80311	RESONATOR, 4.19MHZ, FOR IC242

REF. NO.	PART NO.	DESCRIPTION
T73		ASSY, PCB, POWER TRANS
⚠ PT291	4822 146 21636	POWER TRANSFORMER, TUNER

FL BLOCK DIAGRAM (TUNER)

FL241 (Tuner Fluorescent Display)



[ ]:Red, ather Blue-green

Segment Map

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
G1	AM	SUB	MW	TV	SW	FM	1	2	MAIN	LW	STEREO	MONO	TIMER	SLEEP	WAKEUP
G2	OFF	ON	REC	SOURCE	CLOCK	⑤b	⑤adeg	⑤c	①a	①b	①h	①g	①e	①c	①d
G3	⑥a	⑥b	⑥f	⑥g	⑥e	⑥c	⑥d	:	②a	②b	②f	②g	②e	②c	②d
G4	⑦a	⑦b	⑦f	⑦g	⑦e	⑦c	⑦d	.	③a	③b	③f	③g	③e	③c	③d
G5	⑧a	⑧b	⑧f	⑧g	⑧e	⑧c	⑧d	.	④a	④b	④f	④g	④e	④c	④d
G6	⑨a	⑨b	⑨f	⑨g	⑨e	⑨c	⑨d	MEMORY		M	AM	PM	kHz	CH	MHz

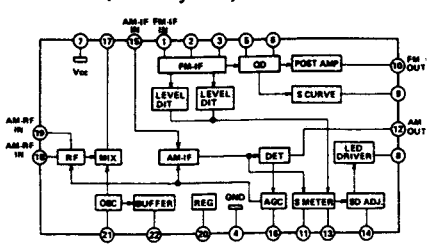
Pin Assignment

1	2	3	4	5	6	7	8	9	10	11	12	13
F	G6	G5	G4	G3	G2	G1	S15	S14	S13	S12	S11	S10

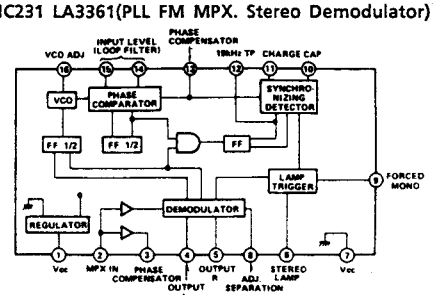
PIN No.	14	15	16	17	18	19	20	21	22	23	24	25
Segment Name	S9	NC	NC	S1	S2	S3	S4	S5	S6	S7	S8	F

IC BLOCK DIAGRAM (TUNER)

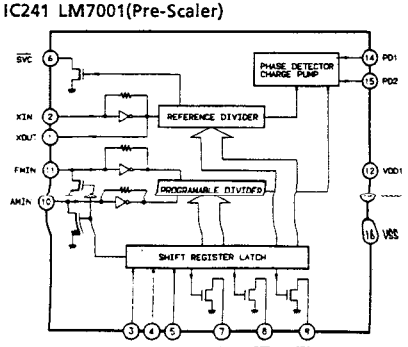
IC221 LA1265(Tuner System)



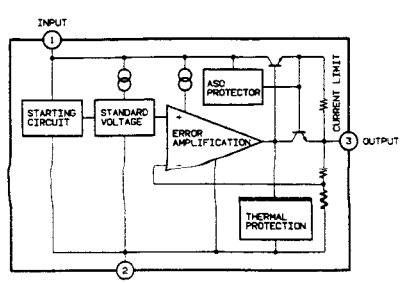
IC231 LA3361(PLL FM MPX. Stereo Demodulator)



IC241 LM7001(Pre-Scaler)



IC291 L78M12ML(3-Terminal Voltage Regulator)



IC BLOCK DIAGRAM (TUNER)

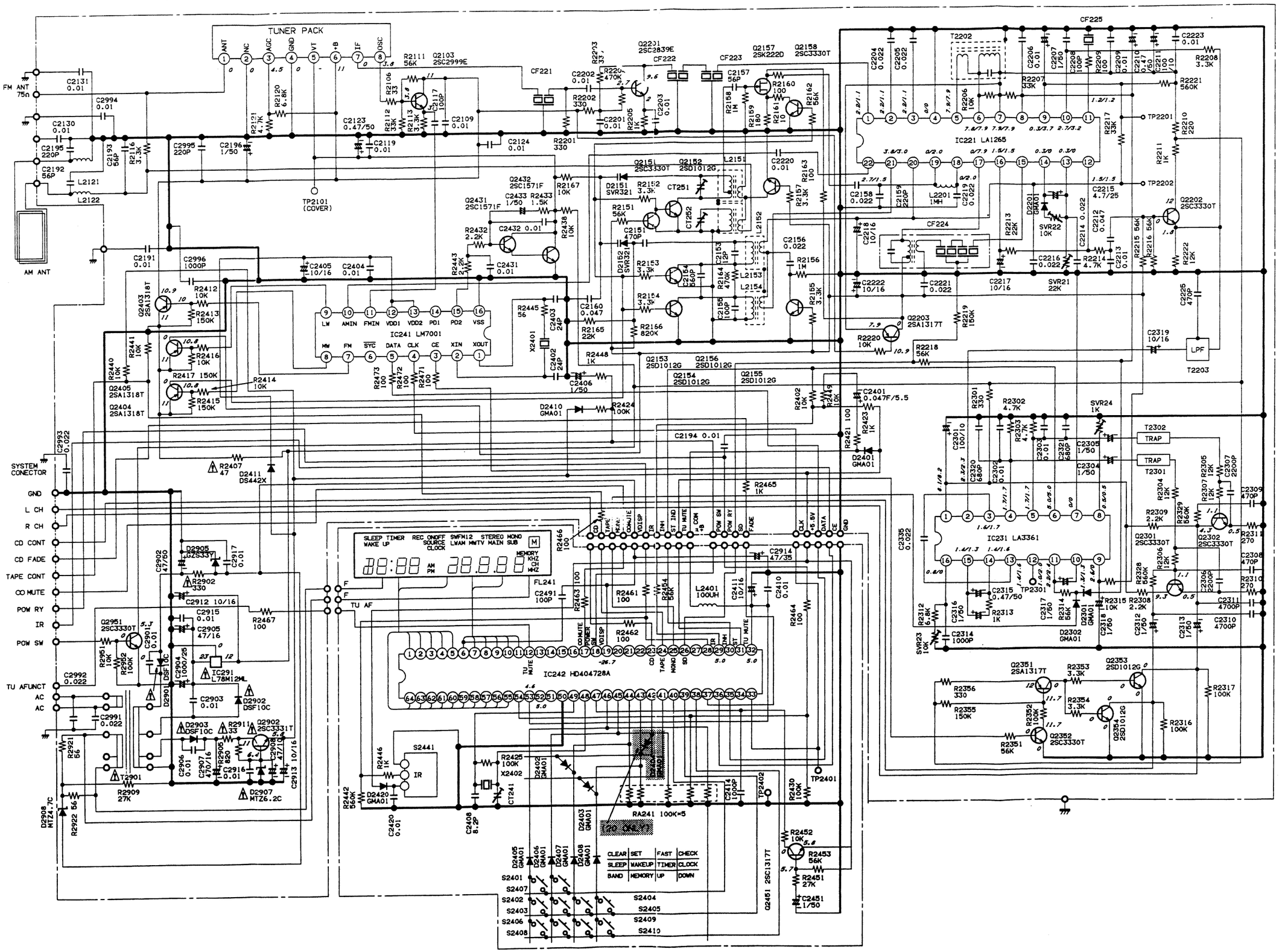
IC242 HD404728A34S (4-Bit Micro Processor)

A* :initial B* :Active Mode C* :Back Up

No	Pin name	Description High : ,Low :	A*	B*	C*
1	SEG.OUT5	FL segment output (SEG.OUT5)			
2	SEG.OUT4	FL segment output (SEG.OUT4)			
3	SEG.OUT3	FL segment output (SEG.OUT3)			
4	SEG.OUT2	FL segment output (SEG.OUT2)			
5	SEG.OUT1	FL segment output (SEG.OUT1)			
6	DIGIT OUT1	FL Digit output (DIG.OUT1)			
7	DIGIT OUT2	FL Digit output (DIG.OUT2)			
8	DIGIT OUT3	FL Digit output (DIG.OUT3)			
9	DIGIT OUT4	FL Digit output (DIG.OUT4)			
10	DIGIT OUT5	FL Digit output (DIG.OUT5)			
11	DIGIT OUT6	FL Digit output (DIG.OUT6)			
12	FUNCT4	FUNCTION SW signal output TUNER;,Hi PULSE	L	H	L
13	FUNCT3	FUNCTION SW signal output AUX;,Hi PULSE	L	H	L
14	FUNCT2	FUNCTION SW signal output VCR;,Hi PULSE	L	H	L
15	FUNCT1	FUNCTION SW signal output DAT;,Hi PULSE	L	H	L
16	-20dB MUTE	-20dB Muting output, ON/OFF→L/H	L	H	L
17	∞MUTE	∞Muting output, ON/OFF→L/H	L	L	Hi-imp
18	POWER SW	POWER SW key input, Nrm.→H		L	
19	Vdisp	Power source for display			
20	VOLUP	Vol Up signal output, Norm.→L	L	H	L
21	VOLDOWN	Vol Down signal output Norm.→L	L	H	L
22	VOLIND	VOL indicator LED output, Norm.→H, VOL mode→flushing	H	H	L
23	CD CONT	CD Control output, Timer;CD start→H, Norm.→L level	L	H	L
24	TAPE CONT	TAPE Control output, Timer and TAPE PLAY→L, TAPE REC→H, Norm.→Hi Impedance	Hi-imp	L/H	Hi-imp
25	FM MONO	FM compulsion monoral output, Stereo Auto.→L, Compulsion Mono.→H	L	H	L
26	TUNED/SD	TUNED/SD signal input		L	
27				L	
28	IR	Remote controller received signal			
29	INH	Inhibit AC PW detected, AC ON→, AC OFF→L		L	
30	STEREO IND	FM.STEREO received display input STEREO TIME→L level		L	

No	Pin name	Description High : ,Low :	A*	B*	C*
31	TU MUTE	TU Muting output Muting ON/OFF→H/L	H	H	Hi-imp
32	VCC	+ Power source			
33	SCK	Clock signal output for data output to PLL IC			
34	SI				
35	SO	Data output to the PLL IC			
36	CE	Chip enable signal output to the PLL IC			
37	CD FADE CONT/OSC CHECK	CD Control output Norm: L, CD FADE IN-FADE OUT: H, PW OFF CHECK Key"1": Clock output for adjustment	L	H	L
38	KEY OUT1	Key Matrix output signal 1			
39	KEY OUT2	Key Matrix output signal 2			
40	KEY OUT3	Key Matrix output signal 3			
41	KEY OUT4	Key Matrix output signal 4			
42	KEY OUT5	Key Matrix output signal 5			
43	KEY IN1	Key Matrix input signal 1			
44	KEY IN2	Key Matrix input signal 2			
45	KEY IN3	Key Matrix input signal 3			
46	KEY IN4	Key Matrix input signal 4			
47	RESET	(RESET)			
48	OSC2	(X'tal connect)			
49	OSC1	(X'tal connect)			
50	GND	GND			
51	CL1				
52	CL2				
53	TEST				
54	POWER RY	POWER RELAY Control output Relay OFF:L Relay ON:H	L	H	Hi-imp
55	SEG.OUT15	FL segment output (SEG.OUT15)			
56	SEG.OUT14	FL segment output (SEG.OUT14)			
57	SEG.OUT13	FL segment output (SEG.OUT13)			
58	SEG.OUT12	FL segment output (SEG.OUT12)			
59	SEG.OUT11	FL segment output (SEG.OUT11)			
60	SEG.OUT10	FL segment output (SEG.OUT10)			
61	SEG.OUT9	FL segment output (SEG.OUT9)			
62	SEG.OUT8	FL segment output (SEG.OUT8)			
63	SEG.OUT7	FL segment output (SEG.OUT7)			
64	SEG.OUT6	FL segment output (SEG.OUT6)			

SCHEMATIC DIAGRAM (TUNER)



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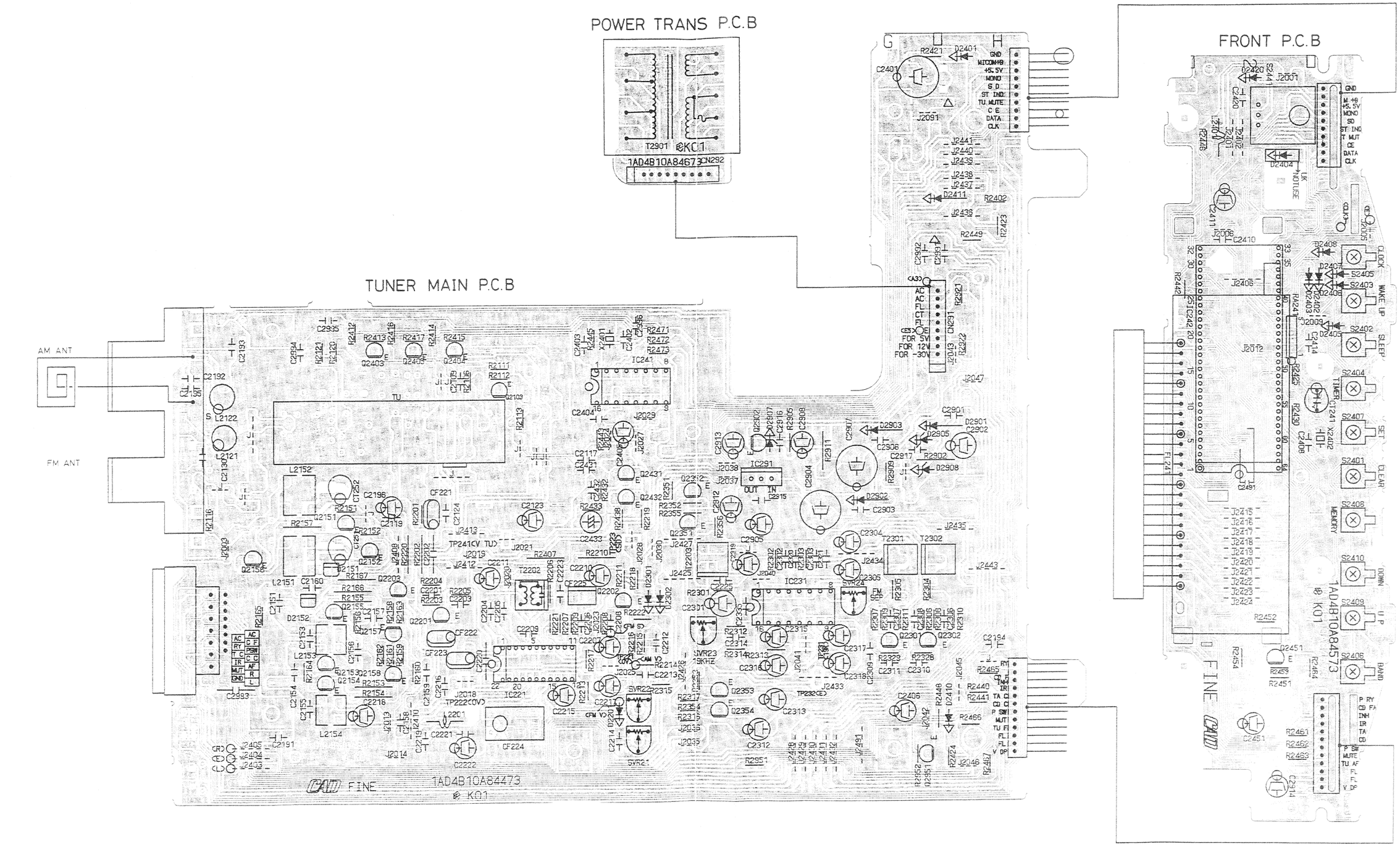
PHIL-04410 / DRUCK2

WIRING DIAGRAM (TUNER)



8) Install the new turntable as shown in the right figure.
9) Secure the turntable by pressing gently.
10) Confirm any bonding material coming out of the upper face (hole) of the Turntable , if it do so be sure to attach the methanol and wipe away by using a piece of cloth or similar materials.

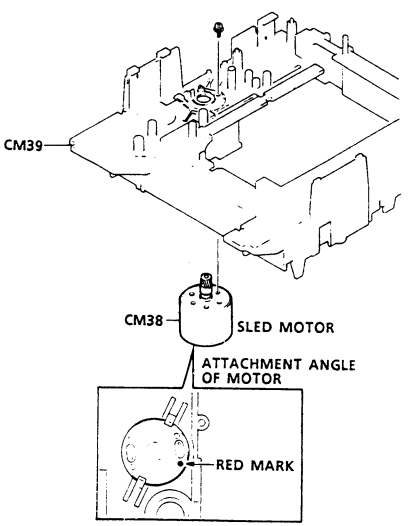
- Install the spindle motor as angle of previous page right below.
- Insert the shaft(CM43) as 45°angle.
  If broken the stopper wing, wipe the shaft by using a piece of cloth and apply the cemedine #575 and fix the chassis (CM50) and the shaft..

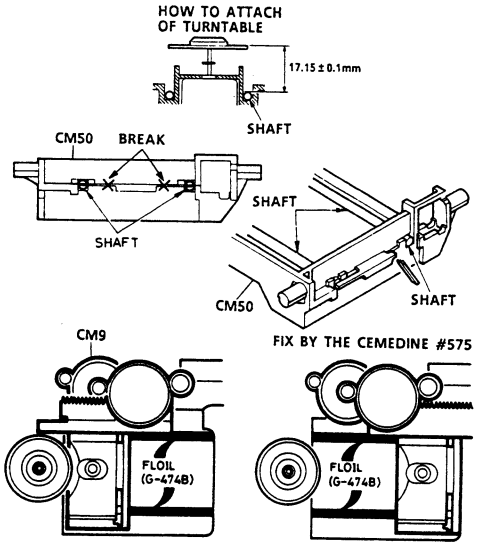
(3) REPLACEMENT AND LUBRICATION OF THE PICK-UP

1) Pull out the two shaft (pick-up rail) from chassis.
2) If the pick-up is reconditioned or replaced, be sure to wipe the rails and also apply a coating of FLOIL (G-474B) to their entire circumference and entire length.

(4) REPLACEMENT OF THE SLED MOTOR

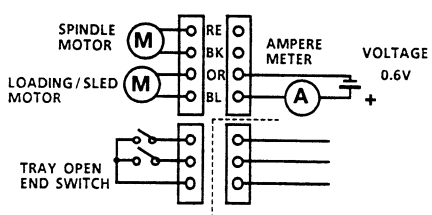
Remove the two pan-head screws that hold the motor, and then replace the motor (CM38).





(5) CHECKING THE OPERATION OF THE SLED MOTOR (The state of disc tray remove)

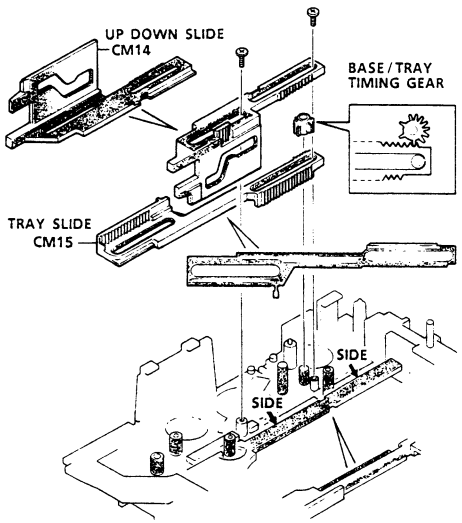
1) Apply a voltage of 0.6V.
   Confirm the direction of movement of the pick-up to inner groove to outer groove can't stop and move it smoothly.
2) Apply a voltage of 4.0V and after loading and gear (CM9) is slip.
   Confirm the current 120mA or more to at this time.



4. CD MECHANISM ASSEMBLY & APPLY GREASE

(1) APPLY GREASE AND INSTALL THE TRAY SLIDE

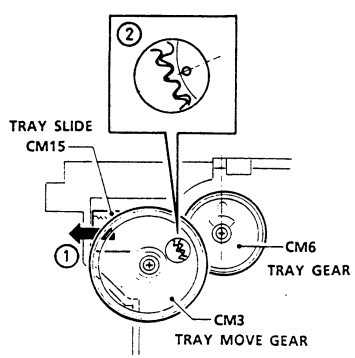
1) Apply the grease FLOIL (G-474B) at part of right figure.
2) *When insert a tray slide (CM15), set up the installation position* with base and tray timing gear as follow figure.



FLOIL (G-474B)

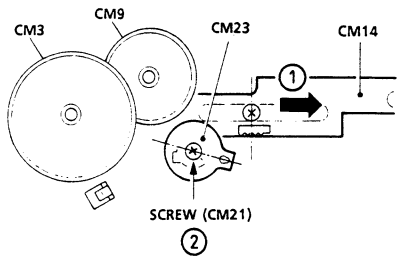
(2) INSTALL THE TRAY GEAR

1) Near the Tray slide (CM15) in the direction of the arrow. (①)
2) Match the inner gear center of Tray gear (CM6).
3) Install the Tray move gear (CM3) with match the outer gear make(○) of Tray gear (CM6) as figure below.

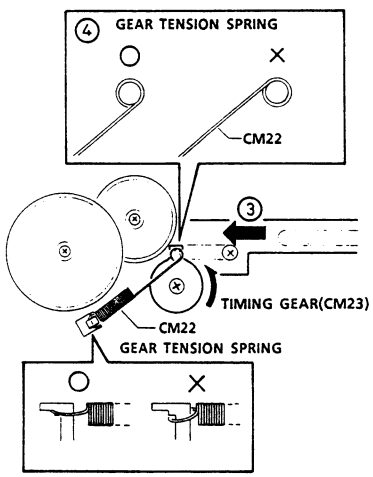


(3) INSTALL THE BASE-UP / DOWN SLIDE AND TIMING GEAR

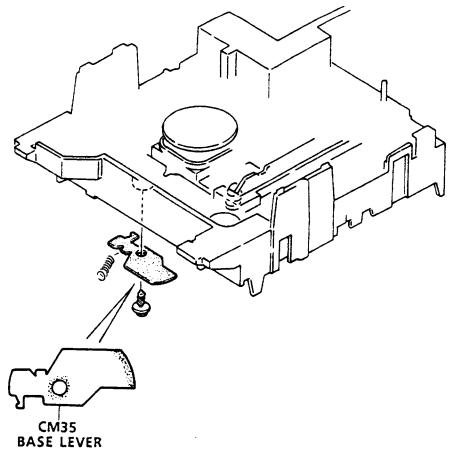
1) When near the Base up / down slide (CM14) in the direction of the arrow (①), set up the four gear as follow figure position.
2) Insert the timing gear (CM23) and stop by the screw (CM21). (②)
3) Turn the timing gear (CM23) to left direction.



4) Hook the gear tension spring (CM22) to timing gear (CM23).

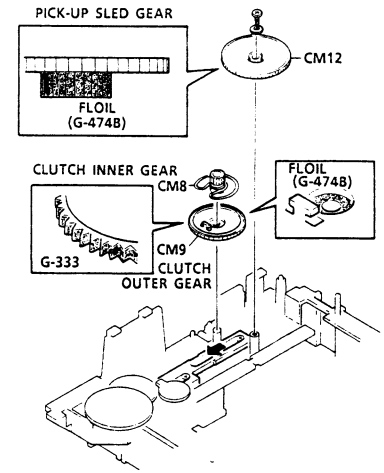


(4) APPLY A GREASE OF BASE LEVER (CM35)
Apply a coating of FLOIL (G-474B)



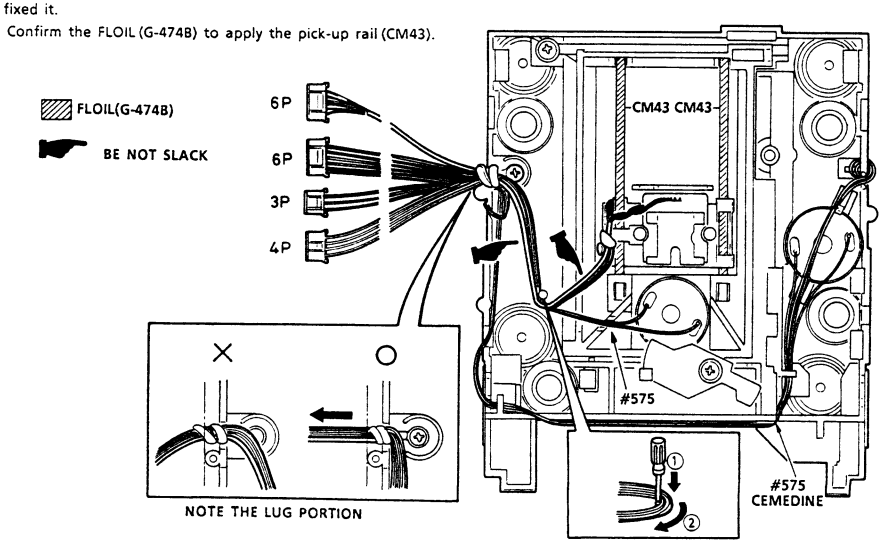
(5) APPLY A GREASE

1) Apply a coating of FLOIL (G-474B) to their entire circumference to Pick-up sled gear (CM12).
2) Apply a grease (G-333) to outside of clutch outer gear (CM9).
3) Apply a FLOIL (G-474B) to figure parts of clutch outer gear.



(6) LEAD RETAINER AND APPLY A CEMEDINE

1) Set up a pick-up to inner side and pass through on the pin (a), still more lead retainer not to touch at motors outside (b) and fixed the lug. Finally, confirm the pick-up moves smoothly from inner to outer circumference.
2) Apply a cemedine #575 for fix the lead retainer and fixed it.
3) Confirm the FLOIL (G-474B) to apply the pick-up rail (CM43).



- Measurement instruments
  - ① Test Disc : 4822 397 60161(SONY-YEDS18)
  - ② Oscilloscope : 10MHz class or Storage scope
    Oscilloscope : 10MHz class or DC voltage mater
  - ③ Frequency Counter
  - ④ Adjustment Driver (Non metallic) : for SVR11

In the adjustment, use the relay cord :
4822 321 61331(614 229 7094)
For connection PCB :
CD MAIN PCB(CN142) and SERVO D/A PCB(CN105)

ITEM	CONNECTION	PARTS	REMARKS
Ⓐ PLL VCO Free Run	Frequency Counter (PLCK · GND)	T102	4.30 ± 0.01 MHz
Ⓑ Tracking Balance	Oscilloscope (TE · GND)	SVR11	Symmetrical Waveform

1. INITIAL

① Perform initial setting for SVR11 as shown in fig,4.

2. FREERUN FREQUENCY ADJUSTMENT FOR PLL-VCO.

① Connect the frequency counter to TP37(H),TP104(E).
② Turn on the power of the unit.
③ Adjust T102 so that the frequency counter reads 4.30 ± 0.01MHz.
- If this adjustment is no good, get the long seek time, not read TOC, not sound in the worst case become high speed tuning reverse and it may wound the disc.

3. TRACKING BALANCE

① Connect the oscilloscope to TP103(TE),TP104(E).
② Turn on the power of the unit.
③ Insert Test Disc and press the Play button.
④ Continuously press the forward(or reverse) search button.
⑤ Adjust SVR11 so that the waveform of TP103(TE) is vertically symmetrical relative to DC 0V level. (Refer to fig,1.)
- If this adjustment is imperfect, become run away the sled motor (pick sending motor), inferior playability.

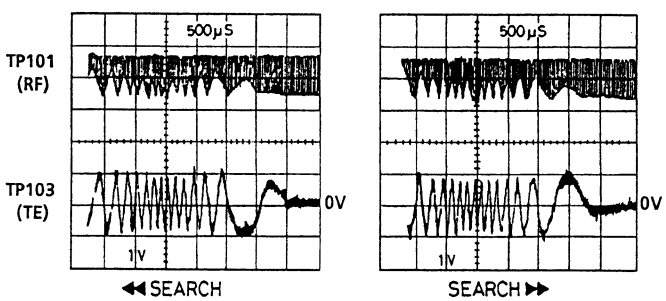


Fig.1

Eye Pattern (Refer Figure)

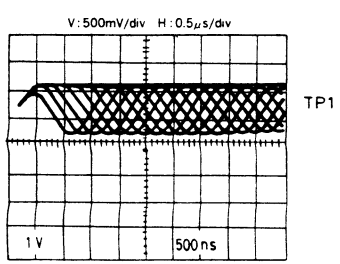


Fig.2

4. PARTS LOCATION

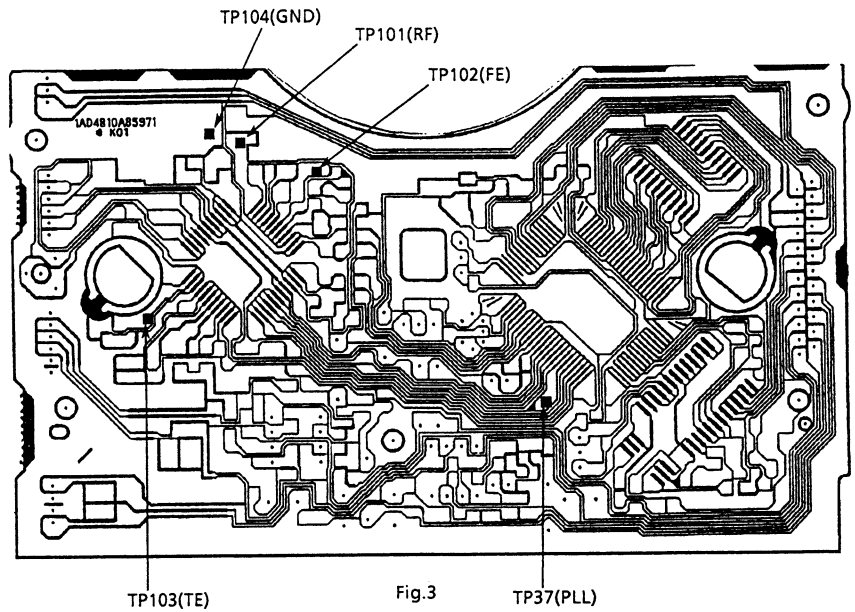


Fig.3

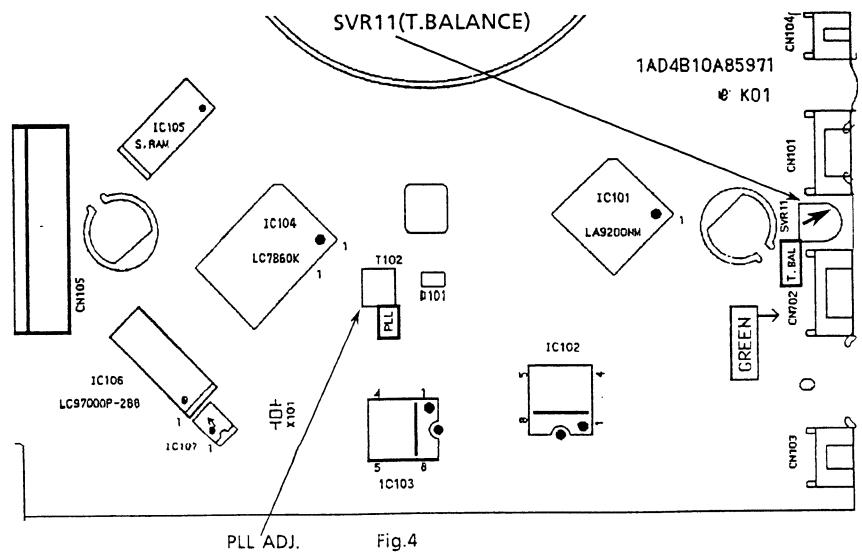
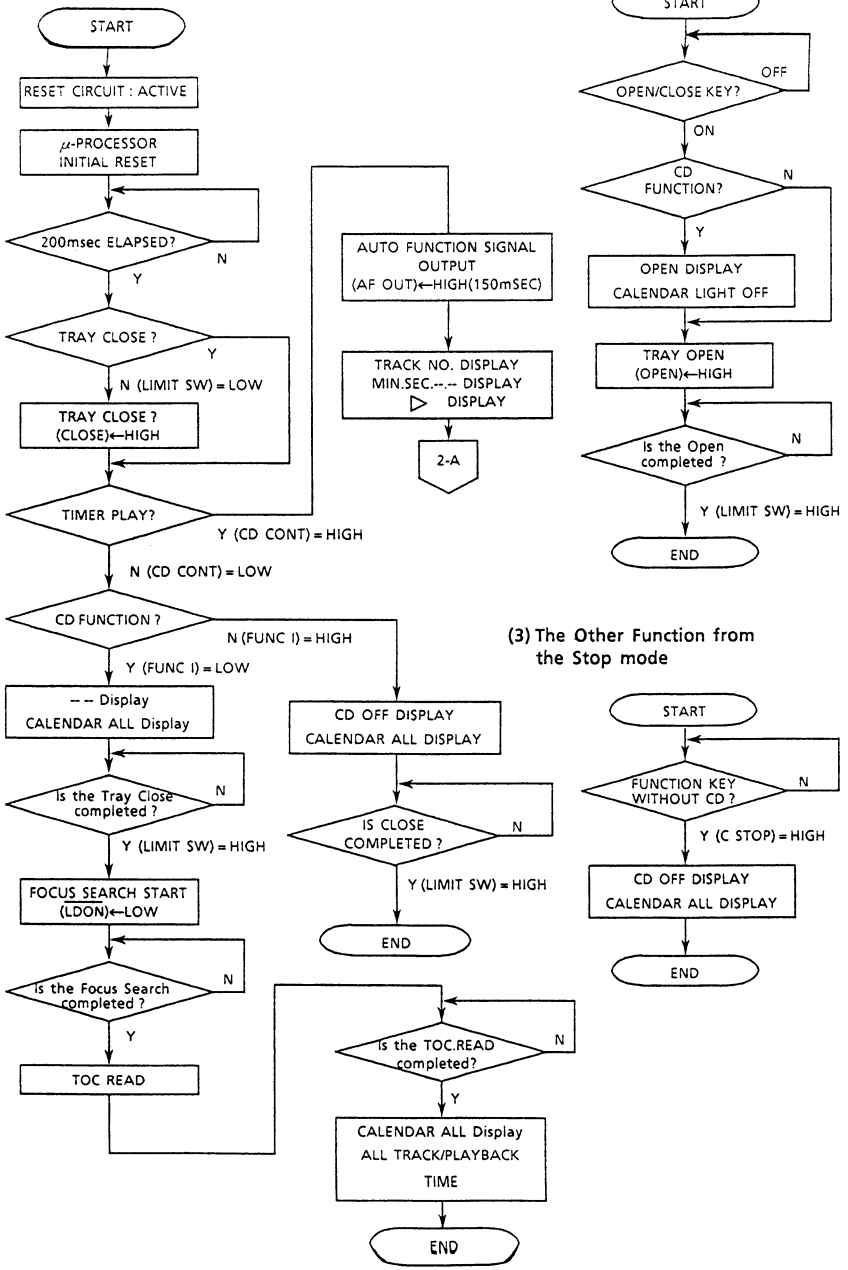


Fig.4

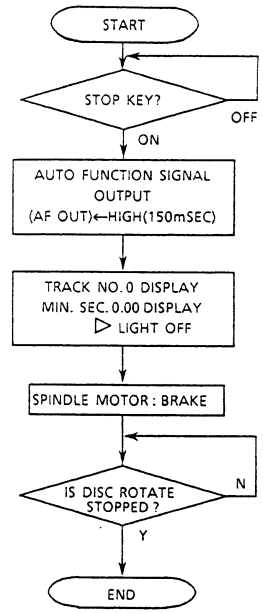
(1) Power On Mode



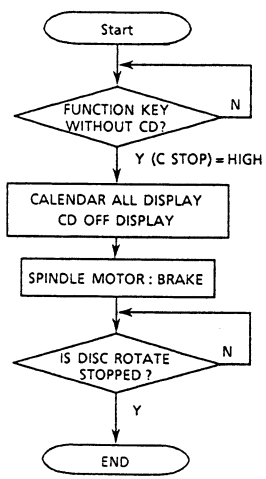
(2) The Tray open from the Stop mode

(3) The Other Function from the Stop mode

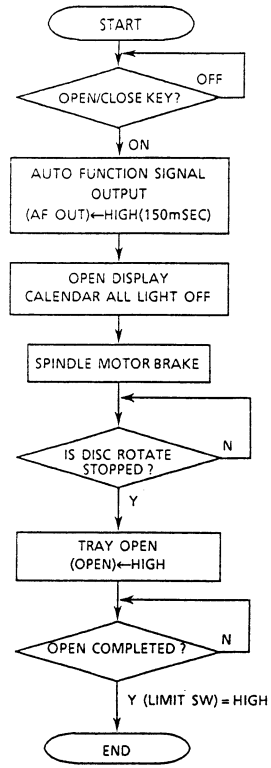
(4) To the Stop mode from the Play-Back



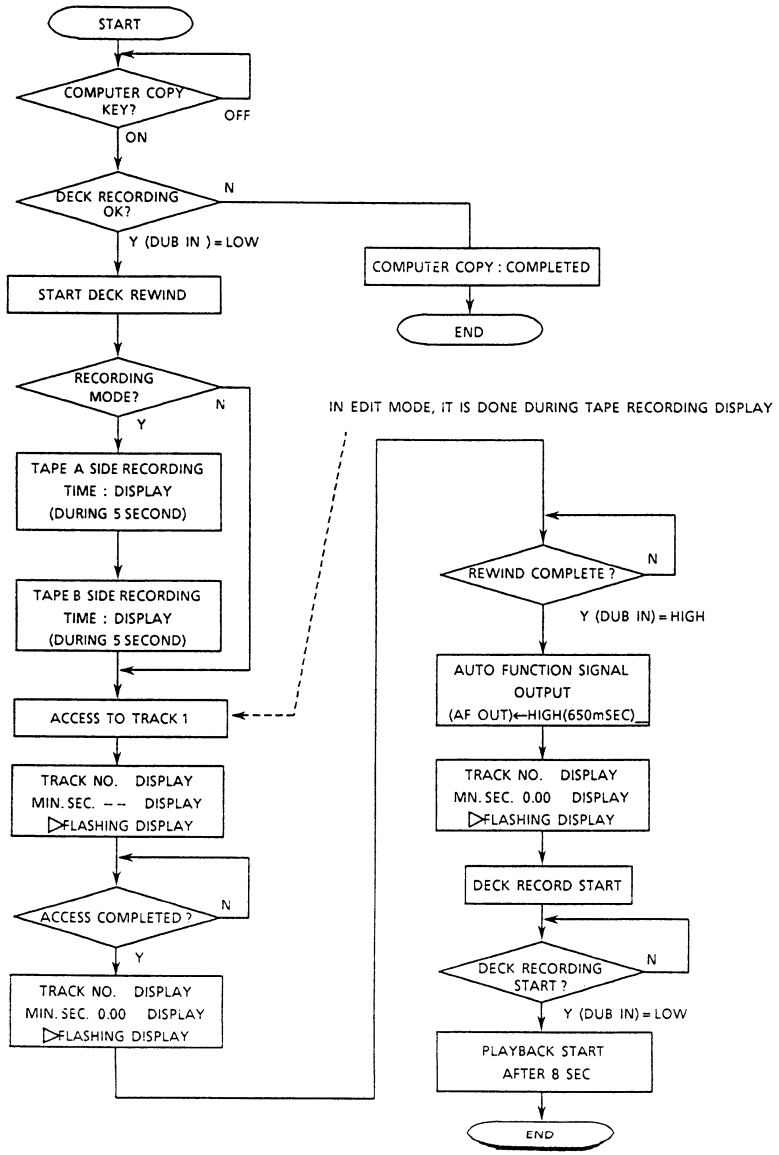
(5) To the Other mode from the Play-Back



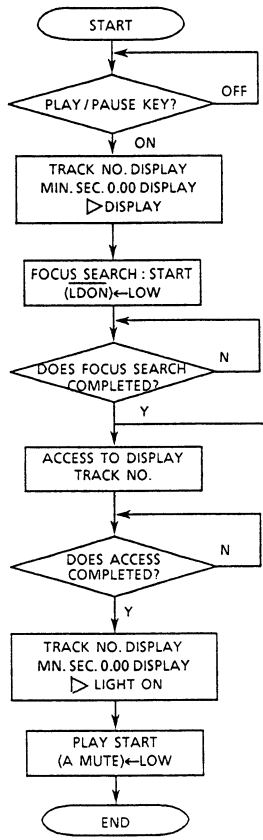
(6) To the Open mode from the Play-Back



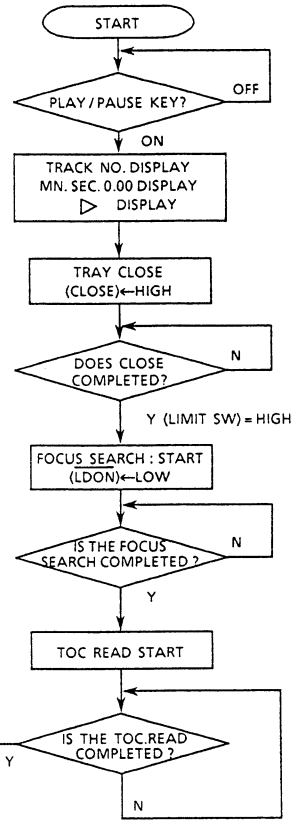
(7) Computer copy

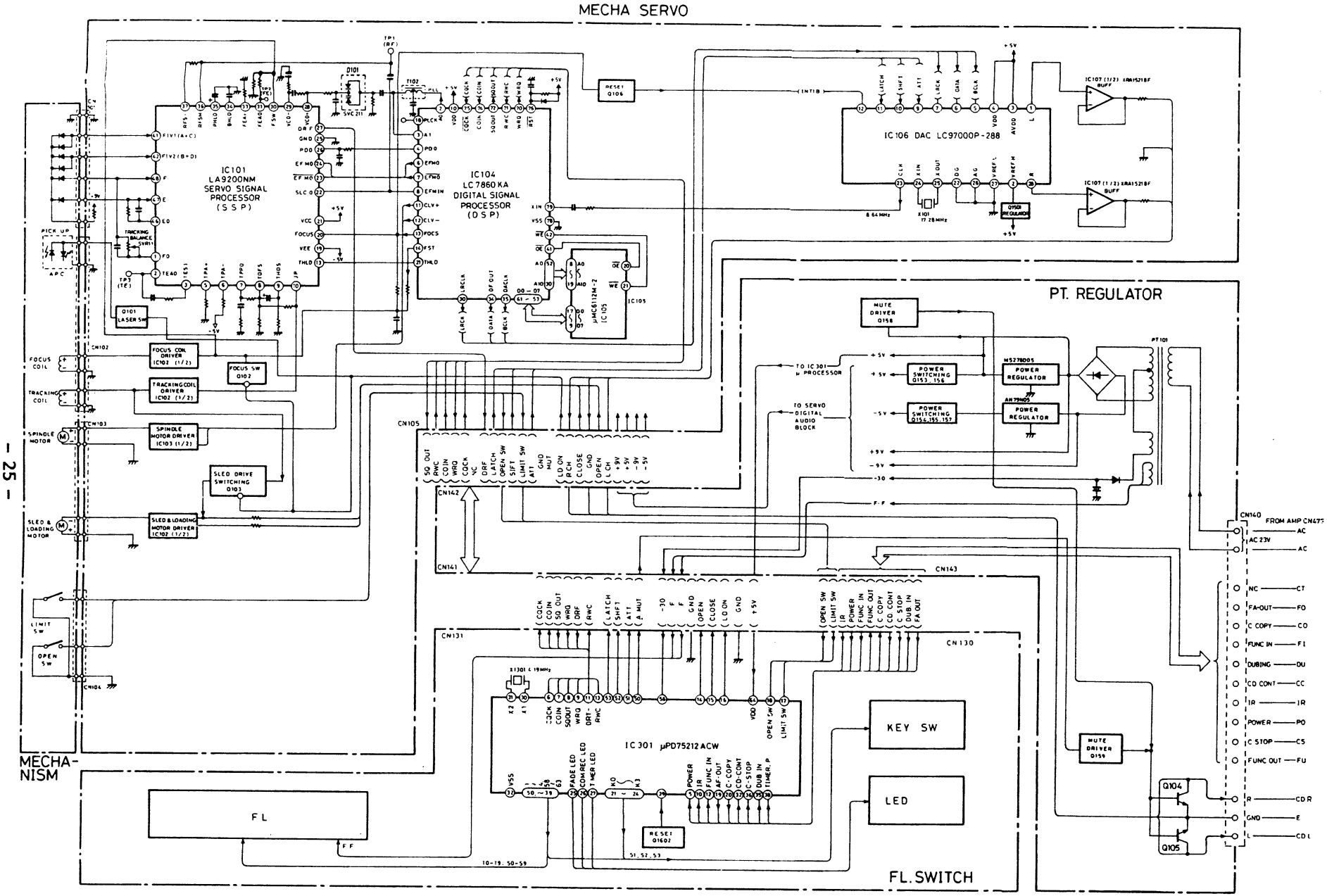


(8) To the Play-Back from the STOP

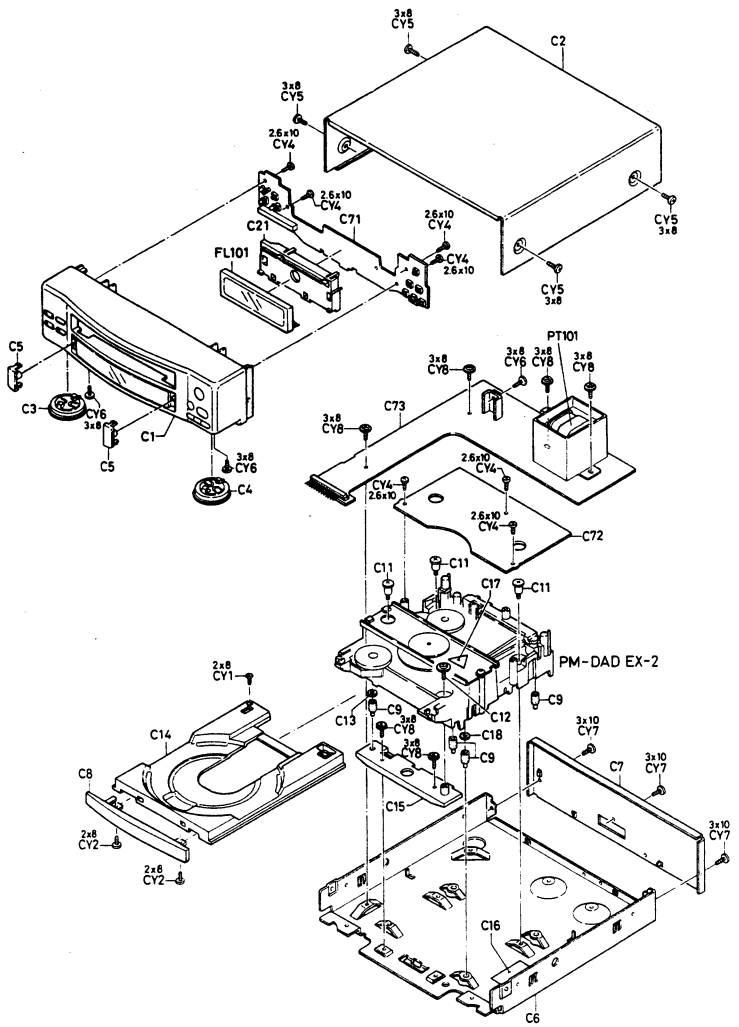


(9) To the Play-Back from the Tray-open




MECHA SERVO
IC101
LA9200NM
SERVO SIGNAL
PROCESSOR
(S S P)
IC104
LC7860KA
DIGITAL SIGNAL
PROCESSOR
(D S P)
IC106 DAC LC97000P-288
PT. REGULATOR
FL.SWITCH
MECHA-
NISM
KEY SW
LED
FL
IC301 μPD75212ACW
FOCUS COIL
TRACKING COIL
SPINDLE MOTOR
SLED & LOADING MOTOR
LIMIT SW
OPEN SW
PICK UP
FROM AMP CN477

EXPLODED VIEW (CD)



REF. NO.	PART NO.	DESCRIPTION
C1	4822 444 40468	ASSY, PANEL, FRONT
C3	4822 462 41839	ASSY, FOOT, FRONT-L
C4	4822 462 41841	ASSY, FOOT, FRONT-R
C5	4822 459 80736	ESCUTCHEON, WINDOW FIX
C8	4822 459 80737	ESCUTCHEON, CD FRONT
C9	4822 466 93016	RUBBER CUSHION, MECHA FLOAT

REF. NO.	PART NO.	DESCRIPTION
C11	4822 502 13785	SPECIAL SCREW, MECHA FIX, x3
C12	4822 502 13786	SPECIAL SCREW, MECHA FIX, x1
C13	4822 532 52349	SPECIAL WASHER, CD MECHA
C14	4822 425 20205	TABLE, LOADING
C18	4822 532 52351	SPECIAL WASHER, CD MECHA
CY8	4822 502 13808	SPECIAL SCREW 3 x 8

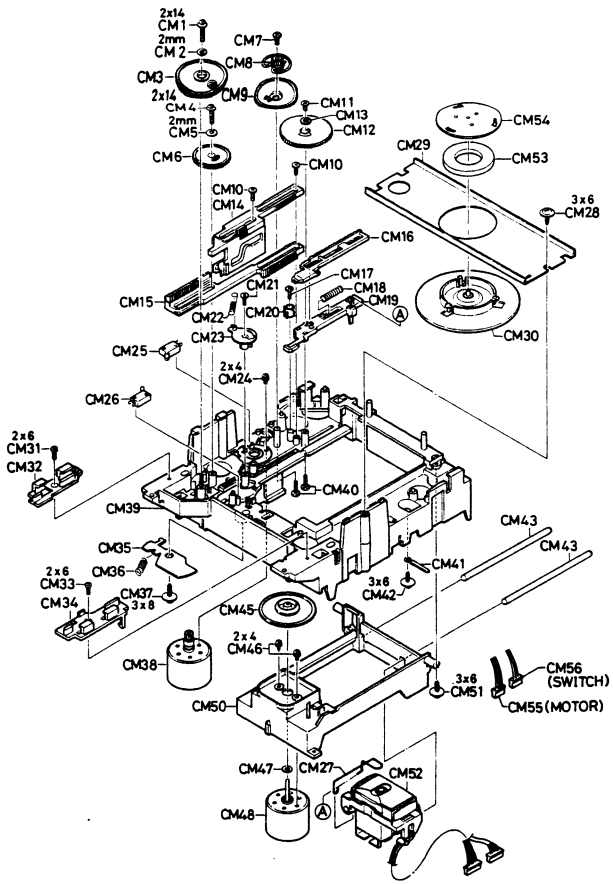
PARTS LIST (CD)

REF. NO.	PART NO.	DESCRIPTION
C71		ASSY, PCB, FRONT (MICON)
C21	4822 403 70435	MOUNT-E, FL
D168	4822 130 33305	DIODE, 1SS133, GMA01
D169	4822 130 33305	DIODE, 1SS133, GMA01
D171	4822 130 33305	DIODE, 1SS133, GMA01
D173	4822 130 82636	ZENER DIODE, MTZ-9.1B
D174	4822 130 33305	DIODE, 1SS133, GMA01
D175	4822 130 33305	DIODE, 1SS133, GMA01
D176	4822 130 33305	DIODE, 1SS133, GMA01
D177	4822 130 82643	LED, SLP-881C-51-B, C
D178	4822 130 82643	LED, SLP-881C-51-B, C
D179	4822 130 82643	LED, SLP-881C-51-B, C
FL101	4822 130 91012	FLUORESCENT TUBE, DISPLAY
IC301	4822 209 30164	IC, μPD75212ACW-256
Q162	4822 130 42683	TR DTC124ES, 2SC3400
S1001	4822 276 20513	SWITCH, TACT, TIME EDIT
S1002	4822 276 20513	SWITCH, TACT, FADE EDIT
S1003	4822 276 20514	SWITCH, TACT, EDIT
S1004	4822 276 20513	SWITCH, TACT, C.REC
S1005	4822 276 20514	SWITCH, TACT, OPEN / CLOSE
S1006	4822 276 20514	SWITCH, TACT, PLAY / PAUSE
S1007	4822 276 20514	SWITCH, TACT, STOP / CLEAR
S1008	4822 276 20514	SWITCH, TACT, MEMORY
S1009	4822 276 20514	SWITCH, TACT, FWD
S1010	4822 276 20514	SWITCH, TACT, BACK
X1301	4822 242 80308	RESONATOR, 4.19MHZ, FOR IC301

REF. NO.	PART NO.	DESCRIPTION
C73		ASSY, PCB, MAIN
CN140	4822 290 61036	SOCKET, 15P, TO AMP UNIT
D151	4822 130 82639	ZENER DIODE, GZA30Y
D153	4822 130 33076	ZENER DIODE, GZA5.6Y
D154	4822 130 32508	DIODE, DSF10C, 1SR35-200A
⚠ D155	4822 130 31533	DIODE, DS135D-KB1, 1SR35-200A-HP
⚠ D156	4822 130 31533	DIODE, DS135D-KB1, 1SR35-200A-HP
⚠ D157	4822 130 31533	DIODE, DS135D-KB1, 1SR35-200A-HP
⚠ D158	4822 130 31533	DIODE, DS135D-KB1, 1SR35-200A-HP
D159	4822 130 82641	ZENER DIODE, GZA5.1Y
D161	4822 130 82634	DIODE, DS442X
D162	4822 130 82634	DIODE, DS442X
IC151	4822 209 30161	IC, M5278D05
IC152	4822 209 30162	IC, AN79N05
PT101	4822 146 21637	POWER TRANSFORMER
Q104	4822 130 62768	TR, 2SD1468S-S
Q105	4822 130 62768	TR, 2SD1468S-S
Q153	4822 130 61189	TR, DTC114TS, RN1211
Q154	4822 130 61189	TR, DTC114TS RN1211
Q155	4822 130 42715	TR, 2SA1048-Y, 2SA933S-R, S
Q156	4822 130 61474	TR, 2SD592-R, S
Q157	4822 130 62849	TR, 2SB621-R, S
Q158	4822 130 62766	TR, DTA123YS
Q159	4822 130 62766	TR, DTA123YS

REF. NO.	PART NO.	DESCRIPTION
C72		ASSY, PCB, SERVO & DA
D101	4822 130 82642	VARACTOR DIODE, SVC211-B-AL
D102	4822 130 33944	DIODE, DAN202K
IC101	4822 209 30154	IC, LA9200NM
IC102	4822 209 30155	IC, LA6517
IC103	4822 209 30155	IC, LA6517
IC104	4822 209 30156	IC, LC7860KA
IC105	4822 209 30157	IC, UM6116M-2
IC106	4822 209 30158	IC, LC97000P-288
IC107	4822 209 30159	IC, XRA15218F
Q101	4822 130 62765	TR, DTA113ZK
Q102	4822 130 62236	TR, DTC124EK
Q103	4822 130 62236	TR, DTC124EK
Q106	4822 130 62236	TR, DTC124EK
Q107	4822 130 61537	TR 2SC2412K
R1901 ~ R1906	4822 116 83096	MT-GLAZE 0.000 ZA 1/10W (JUMPER WIRE)
R1951 ~ R1963	4822 111 90972	MT-GLAZE 0.000 ZA 1/10W (JUMPER WIRE)
SVR11	4822 100 11761	SEMI-FIXED VR, 100K (B)
T102	4822 148 81181	TRANS, OSC
X101	4822 242 80309	RESONATOR, 17.28MHZ, FOR IC106

EXPLODED VIEW (CD MECHANISM)



REF. NO.	PART NO.	DESCRIPTION
CM 2	4822 532 12082	WASHER, GEAR CM3 FIX
CM 3	4822 522 33094	GEAR, TRAY MOVE
CM 5	4822 532 12082	WASHER, GEAR CM6 FIX
CM 6	4822 522 33095	GEAR, TRAY
CM 7	4822 502 13787	SPECIAL SCREW, GEAR CM8 FIX
CM 8	4822 522 33121	ASSY, GEAR, CLUTCH INNER
CM 9	4822 522 33096	GEAR, CLUTCH OUTER
CM10	4822 502 13787	SPECIAL SCREW, SLIDE CM14 FIX
CM11	4822 502 13787	SPECIAL SCREW, GEAR CM12 FIX
CM12	4822 522 33097	GEAR, PICK SLIDE
CM13	4822 532 52352	SPECIAL SCREW, PICK GEAR FIX
CM14	4822 402 61386	SLIDE, BASE UP / DOWN
CM15	4822 402 61391	SLIDE, TRAY
CM16	4822 522 33098	GEAR, PICK RACK UPPER
CM17	4822 502 13787	SPECIAL SCREW, GEAR CM20 FIX
CM18	4822 402 42554	SPRING, RACK BACK

REF. NO.	PART NO.	DESCRIPTION
CM19	4822 522 33099	GEAR, PICK RACK LOWER
CM20	4822 522 33101	GEAR, BASE TRAY TIMING
CM21	4822 502 13787	SPECIAL SCREW, GEAR CM23 FIX
CM22	4822 492 33279	SPRING, GEAR CM23 TENSION
CM23	4822 522 33102	GEAR, TIMING
CM24	4822 502 13788	SCREW, 2×4, MOTOR FIX
CM25	4822 276 13124	SWITCH, LIMIT
CM26	4822 276 13124	SWITCH, TRAY OPEN
CM27	4822 492 70932	SPRING, PICK BACK
CM28	4822 502 13789	SCREW, 3×6, BRACKET FIX
CM30	4822 528 50327	ASSY, PULLEY, CHUCK
CM32	4822 402 61383	BRACKET-M, TRAY GUIDE(L)
CM34	4822 402 61384	BRACKET-M, TRAY GUIDE(R)
CM36	4822 492 42555	SPRING, BASE LEVER MOVE
CM38	4822 361 30356	ASSY, MOTOR, LOADING / SLED
CM40	4822 502 13787	SPECIAL SCREW, BOSS REINFORCE

PARTS LIST (CD MECHANISM)

REF. NO.	PART NO.	DESCRIPTION
CM45	4822 528 10824	TURN-TABLE, CHUCK
CM46	4822 502 13788	SCREW 2 x 4
CM47	4822 532 52353	SPECIAL WASHER, ADHESIVE
CM48	4822 361 30357	MOTOR, SPINDLE
CM51	4822 502 13789	SCREW 3 x 6

REF. NO.	PART NO.	DESCRIPTION
CM52	4822 691 30259	PICK-UP, LASER
CM53	4822 526 20192	MAGNET, CHUCK
CM54	4822 466 82857	PLATE, MAGNET FIX
CM55	4822 267 41012	ASSY, CONNECTOR, 4P
CM56	4822 267 41013	ASSY, CONNECTOR, 3P

IC VOLTAGE TABLE (CD)

IC 101 LA9200NM

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	-0.3	fluc	0.2	0											0	3.8	0	4.0	-5.0	0
STOP	0		0.3	0	0	0	0	0	0	0	0	0	0	4.8	4.3	4.1	4.1	4.0	-5.0	0
Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	4.9	2.5	2.6	2.4	0	2.4	4.16	2.5	2.4	fluc	-0.3	0.3	0.3	0.8	2.9	1.7		0.3	-5.0	5.0
STOP	4.9	3.6	1.5	1.6	0	2.4	0	2.4	2.4	0	0.6	0.6	0.6	0.2	-0.2	-0.1	0	4.2	4.9	5.0
Pin No.	41	42	43	44	45	46	47	48												
PLAY			-5.0																	
STOP	0	0	-5.0	0	0	0	0	0												

IC 102 · 103 LC6517

Pin No.	1	2	3	4	5	6	7	8
PLAY	fluc	10	fluc	-10	fluc	fluc	fluc	fluc

IC 104 LC7860KA

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY		2.5	2.4	2.4	0	2.4	2.4	2.5	0	4.9	0.8	0	0	3.0	4.2	0	4.2	2.5	4.9	
STOP		2.5	2.4	2.4	0	1.4	1.2	2.5	0	4.9				3.0	4.2	4.2		2.5	4.9	0
Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY									1.0	2.5	4.9	2.0	1.0	2.3	2.4		2.4	0	2.4	2.4
STOP	0	0	0	0	0	0	0	0	1.0	2.5	4.9	2.0	1.0	2.0	2.4		2.4	0	2.4	2.4
Pin No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	3.6	4.5	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	2.6	2.6	2.6	0	2.4	2.4	2.4	2.4
STOP	3.6	4.5	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	1.4	1.4	1.4	0	3.6	3.6	3.6	1.6
Pin No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	2.4				fluc		0.3	fluc	2.4	0.2	fluc	fluc	4.9	fluc	4.9	5	0		2.3	2.3
STOP	3.6				2.3		0.3		2.4	0			4.9		4.9	5	0	0	2.3	2.3

IC 106 LC97000P-288

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	fluc	4	5	5	fluc	fluc	—	0	5	5	5	5	0	0	0	5	5	0	0	0
Pin No.	21	22	23	24	25	26	27	28												
PLAY	0	0	fluc	fluc	fluc	0	0	fluc												

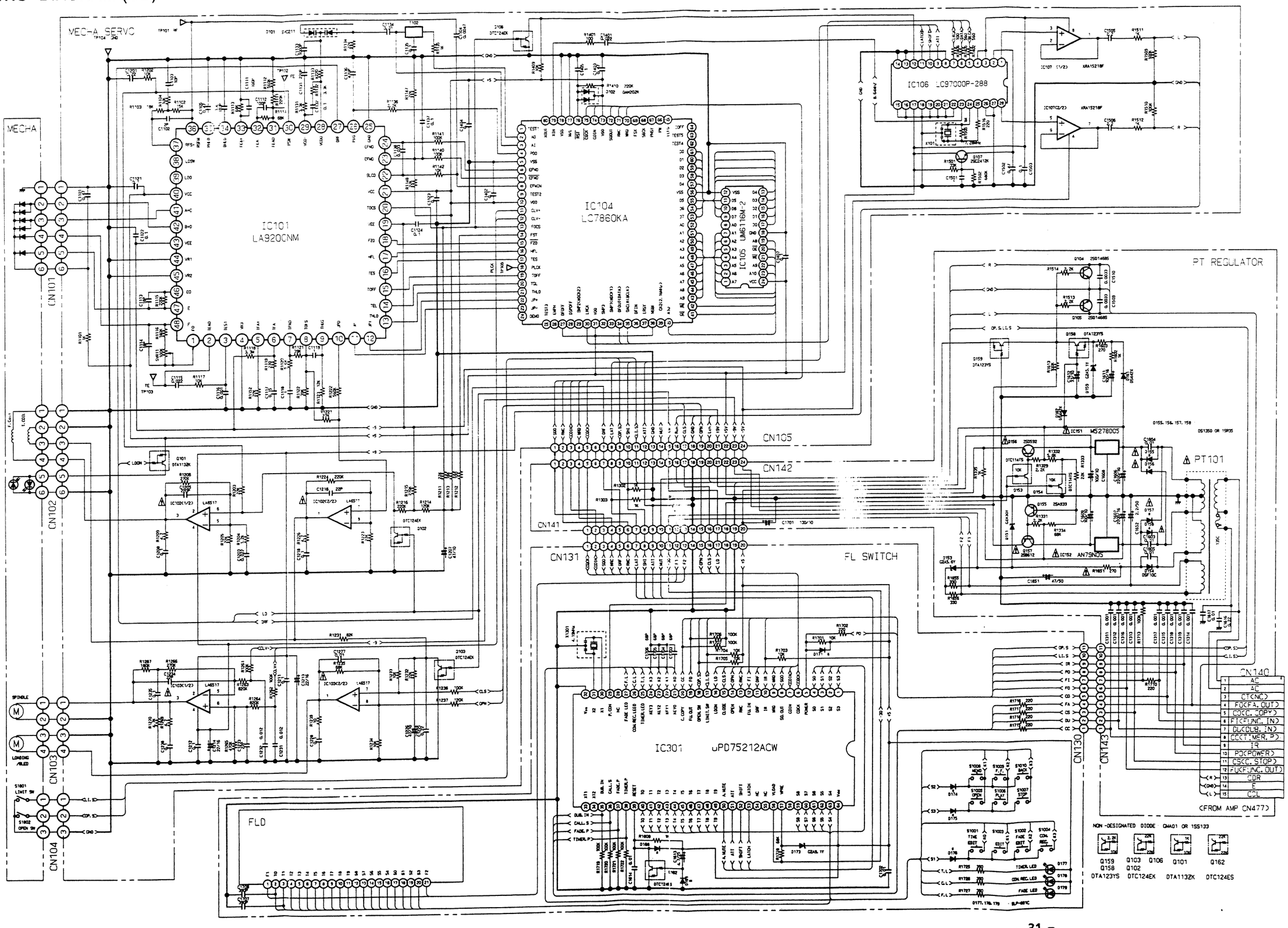
IC 107 XRA15218F

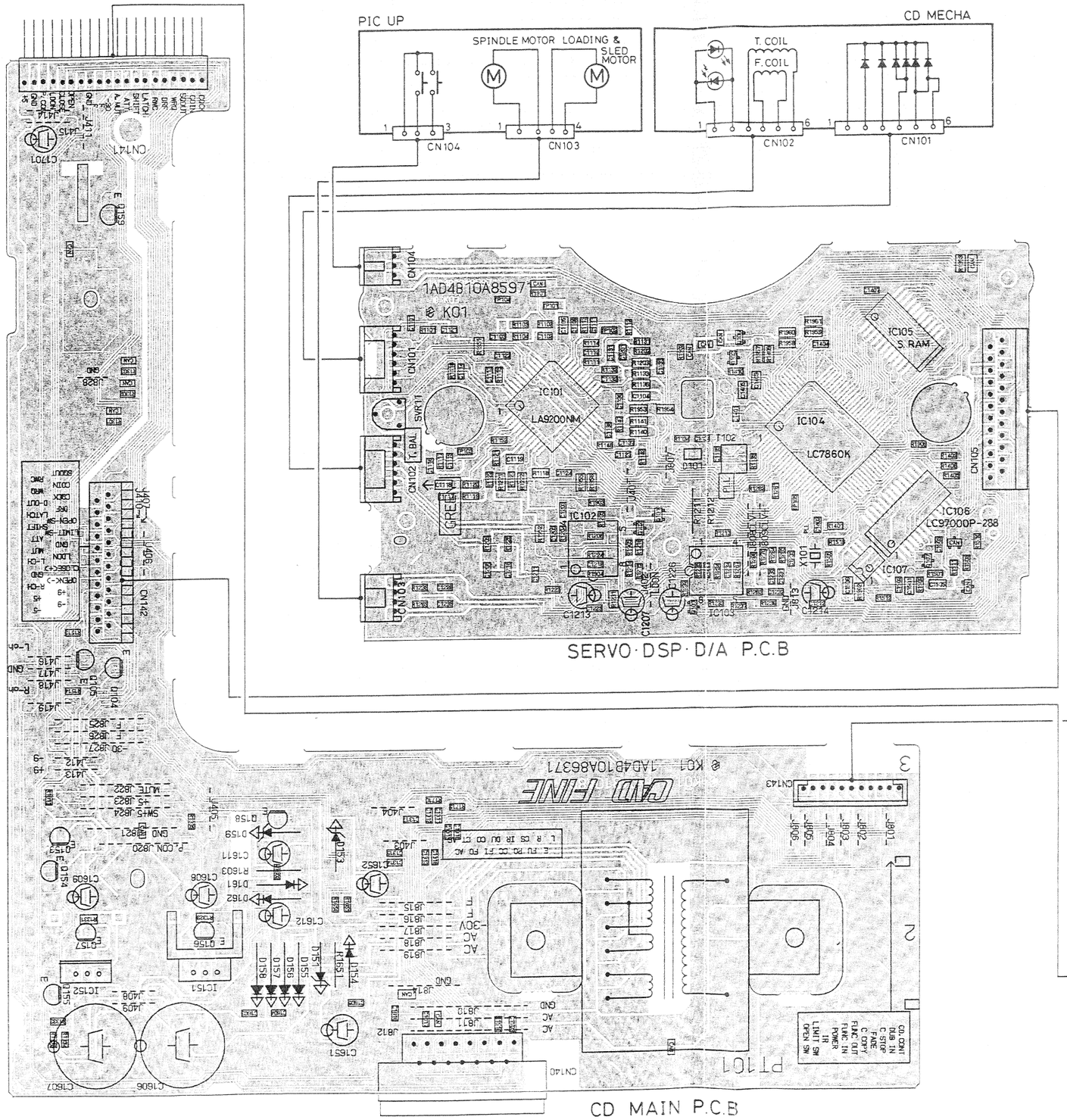
Pin No.	1	2	3	4	5	6	7	8
PLAY	fluc	fluc	fluc	-5	fluc	fluc	fluc	5

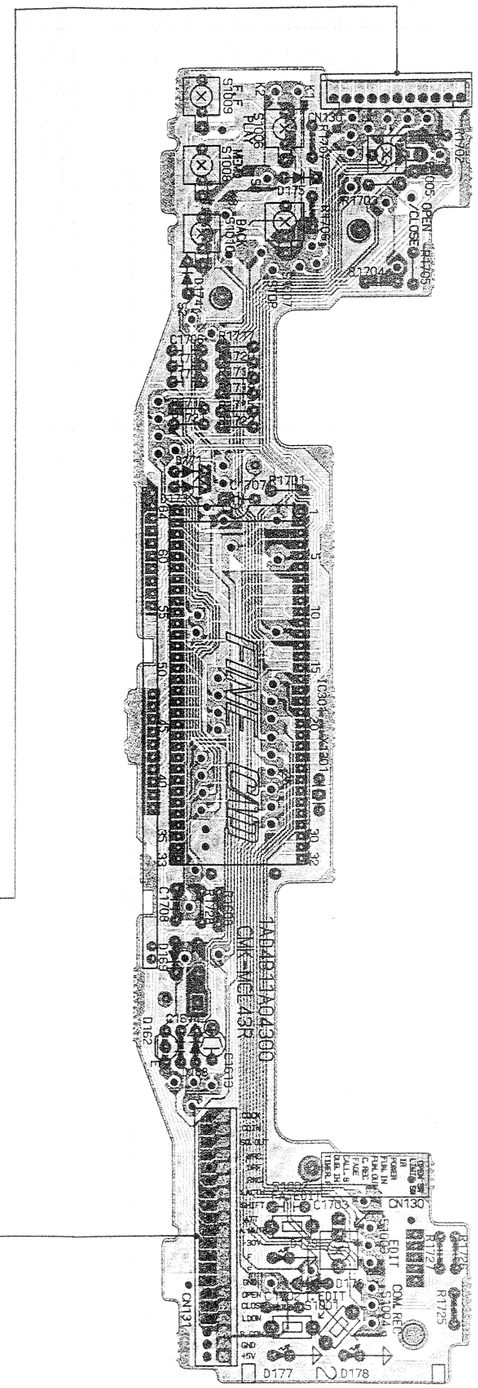
IC 301 µPD75212ACW

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	fluc				5	5	0	0	0	5	4	0	0	5	5	0	5	0	5	fluc
STOP					1						0			opn	cls	5	cls	opn		
Pin No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	fluc	fluc	fluc	fluc	5	5	5		0	4.5	5.5	0	0	0					5	fluc
STOP						0	0		5											
Pin No.	41~49		51	52	53	54	55	56	57	58~63		64								
PLAY	fluc		0	5	5			-32	-4	fluc		5								
STOP			5							fluc		5								

SCHEMATIC DIAGRAM (CD)




PIC UP
SPINDLE MOTOR
LOADING & SLED MOTOR
CD MECHA
T. COIL
F. COIL
CN104
CN103
CN102
CN101
1AD48B10A8597
K01
IC101
LA9200NM
IC105
S. RAM
IC104
LC7860K
IC106
LC97000P-288
IC107
IC103
SERVO·DSP·D/A P.C.B
1AD48B10A8637
CD FINE
CD MAIN P.C.B


1AD48B11A04300
CMK-MCL143R
FRONT P.C.B

TRANSISTOR VOLTAGE TABLE (CD)

TRANSISTOR

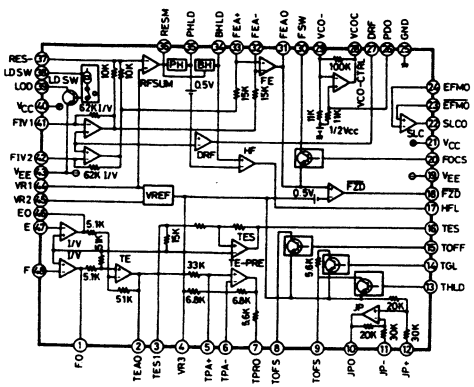
Pin No.	Q101			Q102			Q103			Q104			Q105			Q106			Q107		
	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E
PLAY	0	5	0	0	0	0	0	0	0	-5		0	-5		0	5	0	0	5	5	5
STOP	0	0	5	5	0	0	5	0	0	1			1			0	5	0			

Pin No.	Q153			Q154			Q155			Q156			Q157			Q158		
	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E
CD	0	5	0	0	5	0	1	-5	0	6	5	5	-6	-5	-5	5	-5	5
OTHER	5	0	0	5	0	0	-1	0	0	0	5	0	0	-5	0	5	5	5

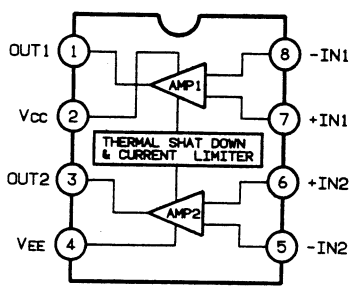
Pin No.	Q159			Q162		
	B	C	E	B	C	E
PLAY	0	-5	0	0	5	0
STOP	0	5	0	0	5	0

IC BLOCK DIAGRAM (CD)

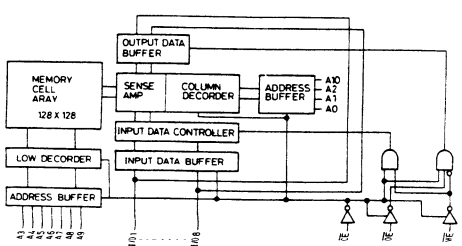
IC 101 LA9200NM(RF-Amplifier · SERVO)



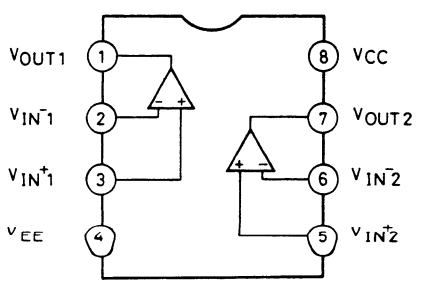
IC 102 · 103 LA6517(Dual Operational Amplifier)



IC 105 UM6116M (2×8 16 CMOS SRAM)



IC 107 XRA15218F-T1(Dual Operational Amplifier)



IC BLOCK DIAGRAM (CD)

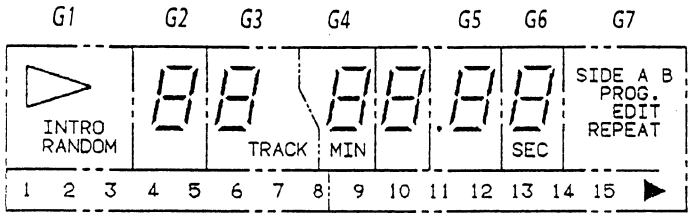
IC104 LC7860KA (Digital Signal Processor)

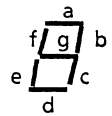
No.	PIN NAME	I/O	FUNCTION
1	TEST 1	I	Test pin. Normally not connected.
2 3 4	AO AI PDO	O I O	VCO is generated by connecting resonance circuit between AI and AO (8.6436MHz). PDO is phase output with EFM signal, and is set to increase frequency when "+".
5	V_{SS}	-	GND
6 7 8	$\overline{EFMO}$ EFMO EFMIN	O O I	1 to 2V P-P HF signal is input to EFMIN. Output from EFMO and $\overline{EFMO}$ passes through amplitude limiter and reverse phase EFM signal is obtained from both. This performs slice level control.
9	TEST 2	I	Test pin. Normally not connected.
10	V_{DD}	-	+5V
11 12	CLV + VCO -	O O	Disk motor control output.
13 14 15	FOCS $\overline{FST}$ $\overline{FZD}$	O O I	Focus servo is off when FOCS is HIGH. The lens is lowered by FST and then FST is HIGH, the lens is gradually pulled up. FOCS is reset when $\overline{FZD}$ is generated. For focus-in.
16 17	HFL TES	I I	Kick pulses, JP+ and JP-, are generated according to track jump command. A jump of the prescribed number of tracks is (1, 4, 16, 64).
18	FSEQ/ PCK	O	When 4.3218MHz PCK monitor terminal / DEMO is HIGH both SYNC detected from EFM signal and SYNC of counter are the same at HIGH.
19 20 21 22 23	TOFF TGL THLD JP + JP -	O O O O O	Kick pulses, JP+ and JP-, are generated according to track jump command. A jump of the prescribed number of tracks is (1, 4, 16, 64).
24	DEMO	I	Set and sound output adjustment pin function.
25	TEST 3	I	Test pin. Normally not connected.
26	EMPH	O	De-emphasis is necessary when HIGH.
27	DFOFF	I	ON / OFF switch for digital filter. No filtering when HIGH.
28	DSPOFF	I	Test pin. Normally LOW.
29 30	SMP 2 LRCLK	O O	Signal output to DAC and signal for L/R switching and sample hold.
31	V_{DD}	-	+5V
32 33 34 35	SMP 3 SMP 1 DFOUT DACLK	O O O O	Signal output to DAC and signal for L/R switching and sample hold.
36 37	DFIN LRSY	I/O O	Signal output for CD-ROM. CD-ROM sync signal.
38	MSBF	I	Signal output to DAC and signal for L/R switching and sample hold.

No.	PIN NAME	I/O	FUNCTION
39	CK 2	O	2.1609MHz
40	AD10	O	RAM address output.
41 42	$\overline{OE}$ $\overline{WE}$	O O	Output state when $\overline{WE}$ = L and input state when $\overline{WE}$ = H. $\overline{OE}$ is for input/output control.
43 44 45 46 47 48 49 50 51 52	AD09 AD08 AD07 AD06 AD05 AD04 AD03 AD02 AD01 AD00	O O O O O O O O O O	RAM address output.
53 54 55	DB7 DB6 DB5	I/O I/O I/O	DB7 to DB0 : Connected to RAM data pins.
56	V_{SS}	-	GND
57 58 59 60 61	DB4 DB3 DB2 DB1 DB0	I/O I/O I/O I/O I/O	DB7 to DB0 : Connected to RAM data pins.
62 63	TEST 4 TEST 5	I I	Test pin. Normally not connected.
64	IOFF	I	For CD ROM. HIGH time interpolation and holding of previous value not performed.
65	EFLG	O	C1 / C2 1-level and 2-level error correction.
66 67 68	PW PWSY SBCK	O O I	PWSY is SYNC combining main and sub and change from HIGH to LOW is taken externally. The P, Q, R, S, T, U, V, and W subcodes are read by sending 8 clock pulses to SBCK.
69	FSX	O	7.35kHz sync signal output.
70 71 72 74 75 77	WRQ RWC SQOUT COIN CQCK M/L	O I O I I I	WRQ goes HIGH when data of subcode Q passes CRC check. This is taken externally and the data from SQOUT is read by sending $\overline{CQCK}$. When data is required with LSB first, M/L is driven LOW. After the micro-processor sets RWC to HIGH, the command is given by output synchronized with the $\overline{CQCK}$ command data.
73	V_{DD}	-	+5V
76	$\overline{RES}$	I	Goes LOW once when power is turned on.
78	V_{SS}	-	GND
79 80	XIN XOUT	I O	Pin for connection to 8.6436MHz crystal oscillator.

'C BLOCK DIAGRAM (CD)

FLD (CD Fluorescent Display)





Segment Map

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
S1		a	a	a	a	a	a	SIDE	1	9
S2	INTRO	b	b	b	b	b	b	A	2	10
S3	RANDOM	f	f	f	f	f	f	B	3	11
S4		g	g	g	g	g	g	PROG.	4	12
S5		e	e	e	e	e	e	EDIT	5	13
S6		e	e	e	e	e	e	REPEAT	6	14
S7		d	d	d	d	d	d		7	15
S8			TRACK	-	MIN		SEC		8	▶

Pin Assignment

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Segment Name	F1	F1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G8	G7	G6	G5	G4	G3	G2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	F1	F1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	G8	G7	G6	G5	G4	G3	G2

IC106 LC97000-288 (D/A converter)

No.	Symbol	I/O	Function description
1	L-CH	O	DAC CH-1 output pin
2	VRH	R	Reference voltage "H" input pin
3	AVDD	P	Analog system power supply pin
4	DVDD	P	Digital system power supply pin
5	BCLK	I	Bit CLOCK pin
6	DATA	I	Digital audio data input pin Input in bit serial from MSB
7	LRCK	I	LR CLOCK input pin LRCK = "H" CH1 LRCK = "L" CH2
8	TEST	I	Test pin (normally "L")
9	ATT	I	Attenuation data input pin Input in bit serial from LSB
10	SHIFT	I	Attenuation data shift CLOCK input pin
11	LATCH	I	Attenuation data latch CLOCK input pin
12	INITB	I	Initializing signal input pin (normally "H")
13	TEST	I	Test pin (normally "L")

No.	Symbol	I/O	Function description
14	EMPH2	I	De-emphasis set pin
15	EMPH1	I	De-emphasis set pin
16	D/N	I	Normal/double speed switch pin
17	SOC2	I	Input source select pin
18	SOC1	I	Input source select pin
19	MODE	I	Operation mode set pin
20	TEST	I	Test pin (normally "L")
21	TEST	I	Test pin (normally "L")
22	DGND	P	Digital system GROUND pin
23	CLKOUT	O	CLOCK output pin At 392Fs :1/2 XOUT At 384Fs, 448Fs, 512Fs : 1/4 XOUT
24	XIN	I	Crystal oscillation input pin.
25	XOUT	O	Crystal oscillation output pin.
26	AGND	P	Analog system GROUND pin.
27	VRL	R	Reference voltage "L" input pin.
28	R-CH	O	DAC CH-2 output pin

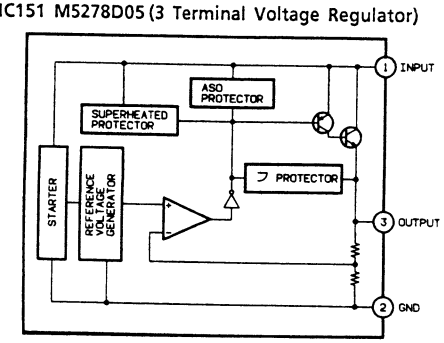
IC BLOCK DIAGRAM (CD)

IC301 μPD75212ACW-256 (4 Bit Micro Processor)

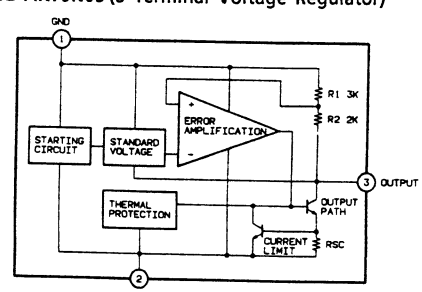
No	Pin name	Description
1	S3	FL Segment Signal Output & Key scan output
2	S2	FL Segment Signal Output & Key scan output
3	S1	FL Segment Signal Output & Key scan output
4	S0	FL Segment Signal Output & Key scan output
5	P CHK	Power detect (ON / $\overline{OFF}$)
6	CQCK	LC7860KA interface (clock)
7	COIN	LC7860KA interface (SUBQ data)
8	SQOUT	LC7860KA interface (command data)
9	WRQ	LC7860KA interface (SUBQ trigger)
10	IR	Remote control signal input
11	DRF	Detected for RF signal (ON / $\overline{OFF}$)
12	FUNCT	Function input (CD Time = LOW)
13	RWC	LC7860KA interface(data latch)
14	OPEN	Tray drive motor (SLED motor) control
15	CLOSE	Tray drive motor (SLED motor) control
16	$\overline{LDON}$	LASER ON / OFF OUTPUT
17	LIMIT SW	PICK Limit SW input ($\overline{ON}$ / OFF)
18	OPEN SW	Open SW input ($\overline{ON}$ / OFF)
19	AF OUT	Auto function signal output (for DECK and AMP)
20	C COPY	Computer copy signal output (for DECK) High
21	KEY0	KEY input
22	KEY1	KEY input
23	KEY2	KEY input
24	KEY3	KEY input
25	TIME LED	Time edit LED display (Disp. $\overline{ON}$ / OFF/)
26	DUB LED	Dubbing LED display (Disp. $\overline{ON}$ / OFF/)
27	FADE LED	FADE LED Lighting (Disp. $\overline{ON}$ / OFF/)
28	PD PORT	Not used
29	P CON	Power control (PW ON/OFF)
30	X1	Clock generator input (4.19MHz)
31	X2	Clock generator output (19MHz)
32	Vss	GND
33	XT1	Not used (GND)

No	Pin name	Description
34	XT2	Not used (Open)
35	DUB IN	Dubbing input (from DECK)
36	C STOP	Call Stop Signal input
37	CD FADE	Timer play signal input (from TUNER)
38	CD CONT	Timer play signal input (from TUNER)
39	$\overline{RESET}$	Reset input
40	T0	FL Digit Signal Output
41	T1	FL Digit Signal Output
42	T2	FL Digit Signal Output
43	T3	FL Digit Signal Output
44	T4	FL Digit Signal Output
45	T5	FL Digit Signal Output
46	T6	FL Digit Signal Output
47	T7	FL Digit Signal Output
48	T8	FL Digit Signal Output
49	T9	FL Digit Signal Output
50	LATCH	DAC Control Output (Latch)
51	SHIFT	DAC Control Output (Clock)
52	ATT	DAC Control Output (Data)
53	A MUTE	Analog Mute Signal
54	S11	
55	S10	
56	VLOAD	Power source for pull down of FL display terminal
57	VPRE	Power source for output buffer of FL display terminal
58	S9	FL Segment Signal & Key Scan output
59	S8	FL Segment Signal & Key Scan output
60	S7	FL Segment Signal & Key Scan output
61	S6	FL Segment Signal & Key Scan output
62	S5	FL Segment Signal & Key Scan output
63	S4	FL Segment Signal & Key Scan output
64	VDD	Power (+5V)

IC151 M5278D05 (3 Terminal Voltage Regulator)



IC152 AN79N05 (3 Terminal Voltage Regulator)



TAPE DECK UNIT

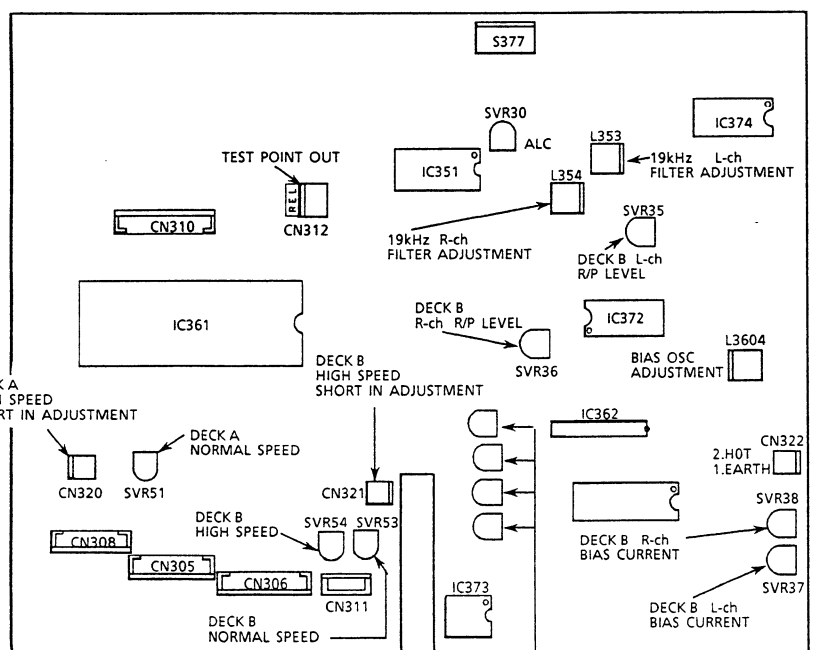
TAPE DECK ADJUSTMENT

1, AMPLIFIER ADJUSTMENT

	ITEM	TEST TAPE	INPUT	DOLBY	OUTPUT	ADJUST POINT	REMARKS
1	Head Azimuth	SBC419	——	——	TP OUT CN312	Azimuth Screw	Adjust screw so that 10kHz output become maximum. (FWD / REV)
2	Playback Level	TCC130	——	OFF	TP OUT CN312	SVR31,32 (DECK A) SVR33,34 (DECK B)	Adjust SVR so that TAPE OUT output become 0.775V.
3	OSC	AC224	107kHz	OFF	TP OSC CN322	L3604	Beat Cancel SW1 : Adjust 107 kHz Beat Cancel SW2 : Confirm 103 ± 2kHz
4	19kHz Filter	AC224	19kHz ± 10Hz (-5dB)	OFF	TP OUT CN312	L353 (L-ch) L354 (R-ch)	Set frequency 400Hz output to 0dB. Adjust SVR so that 19kHz output become -30dB.
5	Rec / Play Frequency	AC224	1kHz (-25dB) 10kHZ (-25dB)	ON	TP OUT CN312	SVR37 (L-ch) SVR38 (R-ch)	Set frequency 1kHz output to 0dB. Adjust SVR so that 10kHz output become +1dB.
6	Rec / Play Level	AC224	1kHz (-5dB)	OFF	TP OUT CN312	SVR35 (L-ch) SVR36 (R-ch)	Adjust to obtain same output of 1kHz and 10kHz.

Note. 1. Head azimuth : Be sure both channels (L and R) are the same level and phase. [Both mechanism (DECK A and DECK B)]
2. During adjustment measurement Beat cancel SW is at 1 condition fundamentally, confirm R / P frequency characteristic dolby effect also by 2 condition.

2, PARTS LOCATION



PLAYBACK LEVEL

	L-ch	R-ch
DECK A	SVR 31	SVR 32
DECK B	SVR 33	SVR 34

TAPE DECK ADJUSTMENT & TORQUE

3. TAPE SPEED ADJUSTMENT

Note ; ①. Operate the Mechanism with the normal speed.
②. Begin from the high speed in Motor speed adjustment.

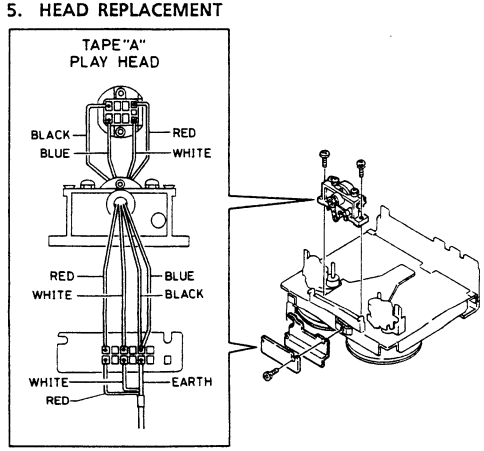
1) Set the test tape TCW-211 (or equivalent) to both mechanism (Deck A / Deck B).
Adjustment should be made at the center portion (FWD Play) on the tape.
2) Play the mechanism in FWD Play.
3) Short the high speed test pin to the high speed portion. (by the clip.)
4) Confirm the indication of the tape speed counter in Deck A.
Adjust the tape speed in Deck B so as to match in Deck A. (It is not SVR : high speed in Deck A.)
Confirm so that a frequency counter reading of high speed become 3000Hz ± 10% in Deck A.
5) Adjust SVR54 so that a frequency counter reading become ±5Hz in Deck B at the FWD Play and near tape center than in Deck A.
Example – Deck A : 3000Hz → Deck B : 3000Hz ± 5Hz
6) Remove the short by the clip, open the high speed test pin. (Normal speed)
7) Stop the mechanism drive.
8) Set the test tape MTT-111 (or equivalent) to both mechanism (Deck A / Deck B).
Adjustment should be made at the center portion (FWD Play) on the tape.
9) Play the Mechanism (FWD Play).
10) Adjust SVR51 so that a frequency counter reading become 3000Hz ± 5Hz in Deck A at the FWD Play and near the tape center.
11) Adjust SVR53 so that a frequency counter reading become 3000Hz ± 5Hz in Deck B at the FWD Play and near the tape center.
12) Stop the mechanism drive.

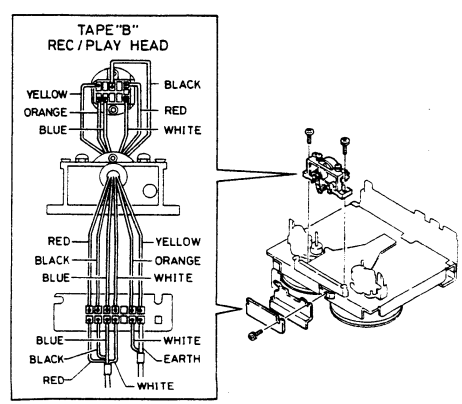
4. CHECKING THE MECHANISM TORQUES

Note : Clean the head, capstan and pinch roller before making any measurement.

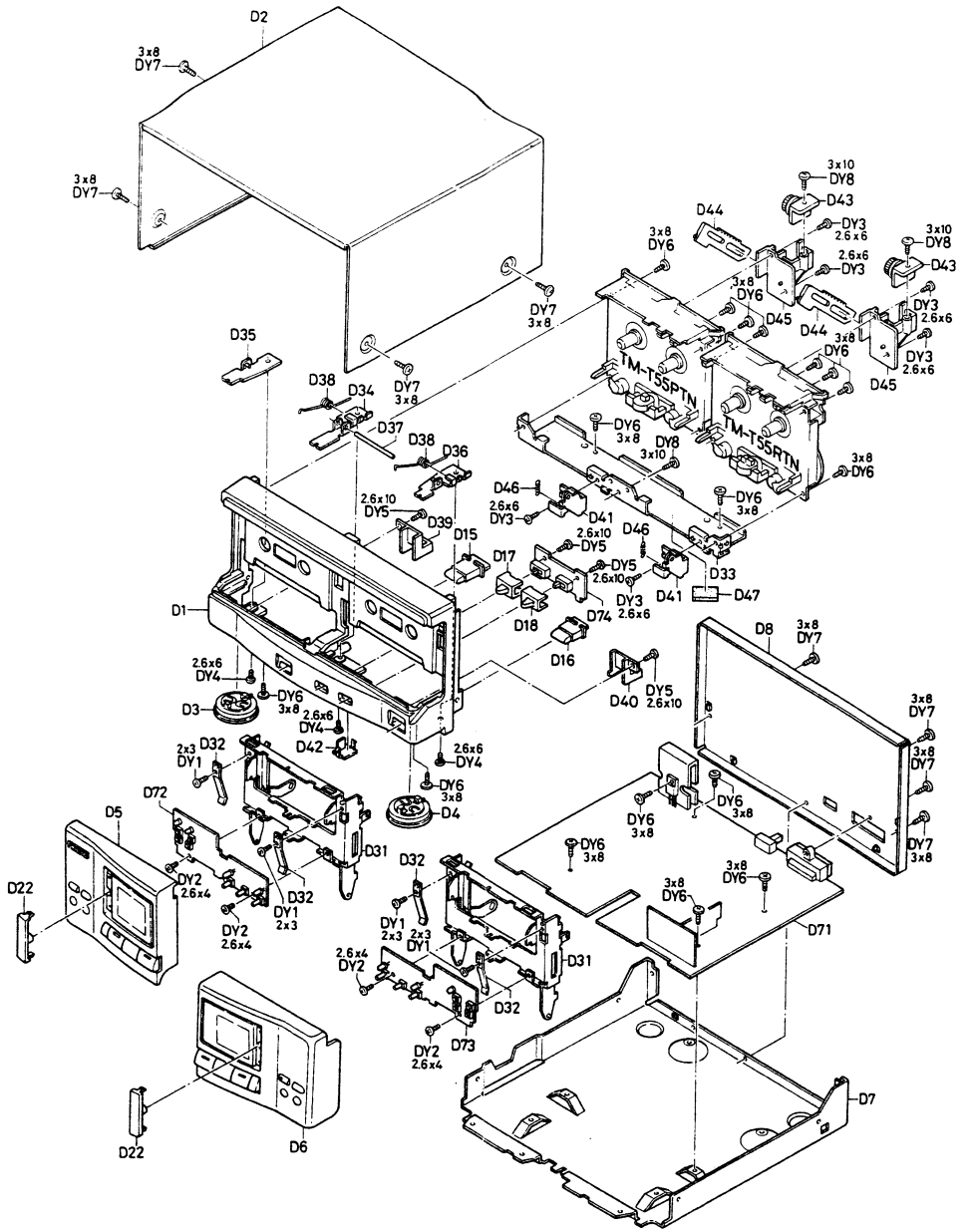
ITEM	TAKE-UP TORQUE	BACK TENSION	PULLEY TENSION
Test cassette	PLAY (FWD) : TW2111A PLAY (REW) : TW2121A F.FWD / REW : TW2231	PLAY (FWD) : TW2111A PLAY (REW) : TW2121A	Driving power cassette : PLAY (FWD) : TW-2412 PLAY (REW) : TW2422
PLAY	30~60gr.cm	2.0~5.0gr.cm	more than 80gr
F.FWD	55~140gr.cm	------	------
REW	55~140gr.cm	------	------

5. HEAD REPLACEMENT





EXPLODED VIEW (TAPE DECK)



PARTS LIST (TAPE DECK)

REF. NO.	PART NO.	DESCRIPTION
D1	4822 443 41025	ASSY, PANEL, FRONT
D3	4822 462 41839	ASSY, FOOT, FRONT-L
D4	4822 462 41841	ASSY, FOOT, FRONT-R
D5	4822 443 63376	ASSY, COVER, DECK A
D6	4822 443 63377	ASSY, COVER, DECK B
D15	4822 410 61429	BUTTON, EJECT DECK A
D16	4822 410 61431	BUTTON, EJECT DECK B
D17	4822 411 61824	KNOB, SLIDE, MODE
D18	4822 411 61825	KNOB, SLIDE, DOLBY
D22	4822 454 12747	ESCUTCHEON, WINDOW FIX
D32	4822 492 70933	SPRING, PLATE, TAPE COMP
D38	4822 492 52264	SPRING, WIRE, LID OPEN
D42	4822 462 71784	STOPPER, SHAFT
D43	4822 522 33107	ASSY, GEAR, DUMPER
D44	4822 402 61387	SLIDE, DUMPER
D45	4822 402 61388	MOUNT-M, DUMPER
D46	4822 492 33281	SPRING, TENS, EJECT

REF. NO.	PART NO.	DESCRIPTION
D71		ASSY, PCB, MAIN
CN304	4822 290 61038	SOCKET, 15P, TO AMP UNIT
D300	4822 130 82661	ZENER DIODE, MTZ-4.7C
D301	4822 130 82669	ZENER DIODE, MTZ-15B
D302	4822 130 82669	ZENER DIODE, MTZ-15B
D348	4822 130 82634	DIODE, DS442X
D349	4822 130 33305	DIODE, 1SS133
D351	4822 130 82634	DIODE, DS442X
D352	4822 130 82634	DIODE, DS442X
D353	4822 130 82634	DIODE, DS442X
D354	4822 130 33305	DIODE, 1SS133
D356	4822 130 33305	DIODE, 1SS133
D357	4822 130 82634	DIODE, DS442X
D361	4822 130 33305	DIODE, 1SS133
D362	4822 130 33305	DIODE, 1SS133
D363	4822 130 33305	DIODE, 1SS133
D364	4822 130 82634	DIODE, DS442X
D366	4822 130 82634	DIODE, DS442X
D367	4822 130 82634	DIODE, DS442X
D368	4822 130 33305	DIODE, 1SS133
D369	4822 130 33305	DIODE, 1SS133
D370	4822 130 33305	DIODE, 1SS133
D391	4822 130 82659	DIODE, DSR-10C-ET5
D392	4822 130 82659	DIODE, DSR-10C-ET5
D395	4822 130 82662	ZENER DIODE, MTZ-16B
D396	4822 130 82663	ZENER DIODE, MTZ-6.2C
D397	4822 130 33305	DIODE, 1SS133
D398	4822 130 82664	ZENER DIODE, MTZ-5.6C
D399	4822 130 82665	ZENER DIODE, MTZ-13A
D3501	4822 130 32783	DIODE, DA203
D3551	4822 130 32783	DIODE, DA203
IC351	4822 209 61254	IC CXA1100P
IC361	4822 209 30196	IC LC66508B-4119
IC362	4822 209 30109	IC LA2000
IC363	4822 209 30188	IC BA3126N
IC371	4822 209 30189	IC LA3246
IC372	4822 209 30191	IC CXA1398P
⚠ ICP364	4822 209 30186	IC PROTECTOR ICP-N15
⚠ ICP365	4822 209 30186	IC PROTECTOR ICP-N15
⚠ ICP366	4822 209 61685	IC PROTECTOR ICP-N38
L351	4822 157 63375	INDUCTOR, FERITE, 6.8MHZ
L352	4822 157 63375	INDUCTOR, FERITE, 6.8MHZ
L353	4822 157 63377	FILTER, LC, MPX
L354	4822 157 63377	FILTER, LC, MPX
L364	4822 148 81182	TRANS, OSC, BIAS
L371	4822 157 63375	INDUCTOR, FERITE, 6.8MHZ
L372	4822 242 80323	MX CIOL
L381	4822 157 63375	INDUCTOR, FERITE, 6.8MHZ
L382	4822 242 80323	MX CIOL
L391	4822 157 63357	FILTER, CHOCK, 100μH
Q301	4822 130 60165	TR 2SA608-G-SPA
Q302	4822 130 62773	TR 2SB598-F-NP
Q303	4822 130 62773	TR 2SB598-F-NP
Q304	4822 130 62773	TR 2SB598-F-NP
Q305	4822 130 60165	TR 2SA608-G-SPA
Q306	4822 130 62773	TR 2SB598-F-NP

PARTS LIST (TAPE DECK)

REF. NO.	PART NO.	DESCRIPTION
Q307	4822 130 62773	TR 2SB598-F-NP
Q308	4822 130 62773	TR 2SB598-F-NP
Q332	4822 130 61189	TR DTC114TS
Q333	4822 130 60754	TR 2SC3331-U
Q334	4822 130 60754	TR 2SC3331-U
Q335	4822 130 62503	TR DTC114YS
Q336	4822 130 61189	TR DTC114TS
Q337	4822 130 62771	TR DTC124TS
Q338	4822 130 61189	TR DTC114TS
Q339	4822 130 61227	TR DTC114ES
Q340	4822 130 61189	TR DTC114TS
Q341	4822 130 61189	TR DTC114TS
Q342	4822 130 61189	TR DTC114TS
Q343	4822 130 61189	TR DTC114TS
Q344	4822 130 62503	TR DTC114YS
Q345	4822 130 61189	TR DTC114TS
Q346	4822 130 61189	TR DTC114TS
Q347	4822 130 61189	TR DTC114TS
Q348	4822 130 62503	TR DTC114YS
Q349	4822 130 62503	TR DTC114YS
Q350	4822 130 60165	TR 2SA608-G-SPA
Q351	4822 130 60945	TR 2SC3330-U
Q352	4822 130 60945	TR 2SC3330-U
Q353	4822 130 60945	TR 2SC3330-U
Q354	4822 130 60945	TR 2SC3330-U
Q356	4822 130 61227	TR DTC114ES
Q357	4822 130 62776	TR 2SC3495
Q358	4822 130 61227	TR DTC114ES
Q361	4822 130 61227	TR DTC114ES
Q362	4822 130 42304	TR 2SD734-G
Q363	4822 130 62503	TR DTC114YS
Q364	4822 130 61189	TR DTC114TS
Q365	4822 130 61189	TR DTC114TS
Q366	4822 130 61189	TR DTC114TS
Q367	4822 130 61189	TR DTC114TS
Q368	4822 130 61189	TR DTC114TS
Q370	4822 130 61189	TR DTC114TS
Q372	4822 130 62771	TR DTC124TS
Q373	4822 130 62771	TR DTC124TS
Q374	4822 130 62768	TR 2SD1468S-S
Q382	4822 130 62771	TR DTC124TS
Q383	4822 130 62771	TR DTC124TS
Q384	4822 130 62768	TR 2SD1468S-S
Q389	4822 130 61442	TR 2SD1913-R
Q391	4822 130 61442	TR 2SD1913-R
Q392	4822 130 61442	TR 2SD1913-R
Q393	4822 130 42241	TR 2SD400-F
Q394	4822 130 42241	TR 2SD400-F
Q395	4822 130 60945	TR 2SC3330-U
Q396	*4822 130 60945*	*TR 2SC3330-U*
Q397	4822 130 61189	TR DTC114TS
Q398	4822 130 62503	TR DTC114YS
⚠ R3615	4822 116 60446	FUSIBLE RES 3.3 J-1/4W
⚠ *R3901*	*4822 116 60446*	*FUSIBLE RES 3.3 J-1/4W*
R3902	4822 116 60558	OXIDE-MT 5.6 JA 2W
R3903	4822 116 60558	OXIDE-MT 5.6 JA 2W

REF. NO.	PART NO.	DESCRIPTION
⚠ R3908	4822 116 60295	FUSIBLE RES 47 J-1/4W
⚠ R3992	4822 116 60295	FUSIBLE RES 47 J-1/4W
R3994	4822 116 60346	OXIDE-MT 2.2K JA 1W
R3996	4822 116 60327	OXIDE-MT 100 JA 1W
RA361	4822 111 92033	RESISTOR, 10K ×10
RA362	4822 111 92035	RESISTOR, 10K ×13
S377	4822 277 21543	SWITCH, BEAT CANCEL
SVR30	4822 100 11351	SEMI-FIXED VR, 10K (B)
SVR31	4822 100 11351	SEMI-FIXED VR, 10K (B)
SVR32	4822 100 11351	SEMI-FIXED VR, 10K (B)
SVR33	4822 100 11351	SEMI-FIXED VR, 10K (B)
SVR34	4822 100 11351	SEMI-FIXED VR, 10K (B)
SVR35	4822 100 11351	SEMI-FIXED VR, 10K (B)
SVR36	4822 100 11351	SEMI-FIXED VR, 10K (B)
SVR37	4822 100 11471	SEMI-FIXED VR, 100K (B)
SVR38	4822 100 11471	SEMI-FIXED VR, 100K (B)
SVR51	4822 100 20681	SEMI-FIXED VR, 2.2K (B)
SVR53	4822 100 20681	SEMI-FIXED VR, 2.2K (B)
SVR54	4822 100 20681	SEMI-FIXED VR, 2.2K (B)
X361	4822 242 80324	RESONATOR, 4.19MHZ, FOR IC361

REF. NO.	PART NO.	DESCRIPTION
D72		ASSY, PCB, SW FOR DECK A
D331	4822 130 82672	LED, SLA-560MT, REV
D332	4822 130 82672	LED, SLA-560MT, FWD
D333	4822 130 82673	LED, SLP-181C-51-B, DUBB.-HIGH
D334	4822 130 82673	LED, SLP-181C-51-B, DUBB.-NORMAL
D381	4822 130 33305	DIODE, 1SS133
D382	4822 130 33305	DIODE, 1SS133
D383	4822 130 33305	DIODE, 1SS133
D384	4822 130 33305	DIODE, 1SS133
D385	4822 130 33305	DIODE, 1SS133
D386	4822 130 33305	DIODE, 1SS133
D387	4822 130 33305	DIODE, 1SS133
D388	4822 130 33305	DIODE, 1SS133
D389	4822 130 33305	DIODE, 1SS133
D390	4822 130 33305	DIODE, 1SS133
S361	4822 276 13128	SWITCH, TACT, AMS REW
S362	4822 276 13129	SWITCH, TACT, REV
S363	4822 276 13129	SWITCH, TACT, STOP
S364	4822 276 13129	SWITCH, TACT, FWD
S365	4822 276 13128	SWITCH, TACT, AMS FWD
S366	4822 276 13128	SWITCH, TACT, DUBB.-HIGH
S367	4822 276 13128	SWITCH, TACT, DUBB.-NORMAL

REF. NO.	PART NO.	DESCRIPTION
D73		ASSY, PCB, SW FOR DECK B
D335	4822 130 82672	LED, SLA-560MT, REV
D336	4822 130 82672	LED, SLA-560MT, FWD
D337	4822 130 82673	LED, SLP-181C-51-B, REC/PAUSE
D371	4822 130 33305	DIODE, 1SS133
D372	4822 130 33305	DIODE, 1SS133

PARTS LIST (TAPE DECK)

REF. NO.	PART NO.	DESCRIPTION
D373	4822 130 33305	DIODE, 1SS133
D374	4822 130 33305	DIODE, 1SS133
D375	4822 130 33305	DIODE, 1SS133
D376	4822 130 33305	DIODE, 1SS133
S368	4822 276 13128	SWITCH, TACT, AMS REW
S369	4822 276 13129	SWITCH, TACT, REV
S370	4822 276 13129	SWITCH, TACT, STOP
S371	4822 276 13129	SWITCH, TACT, FWD
S372	4822 276 13128	SWITCH, TACT, AMS FWD
S373	4822 276 13128	SWITCH, TACT, REC PAUSE
S374	4822 276 13128	SWITCH, TACT, REC MUT

REF. NO.	PART NO.	DESCRIPTION
D74		ASSY, PCB, MODE DOLBY SW
S375	4822 277 21544	SWITCH, SLIDE, DOLBY
S376	4822 277 21545	SWITCH, SLIDE, REV MODE

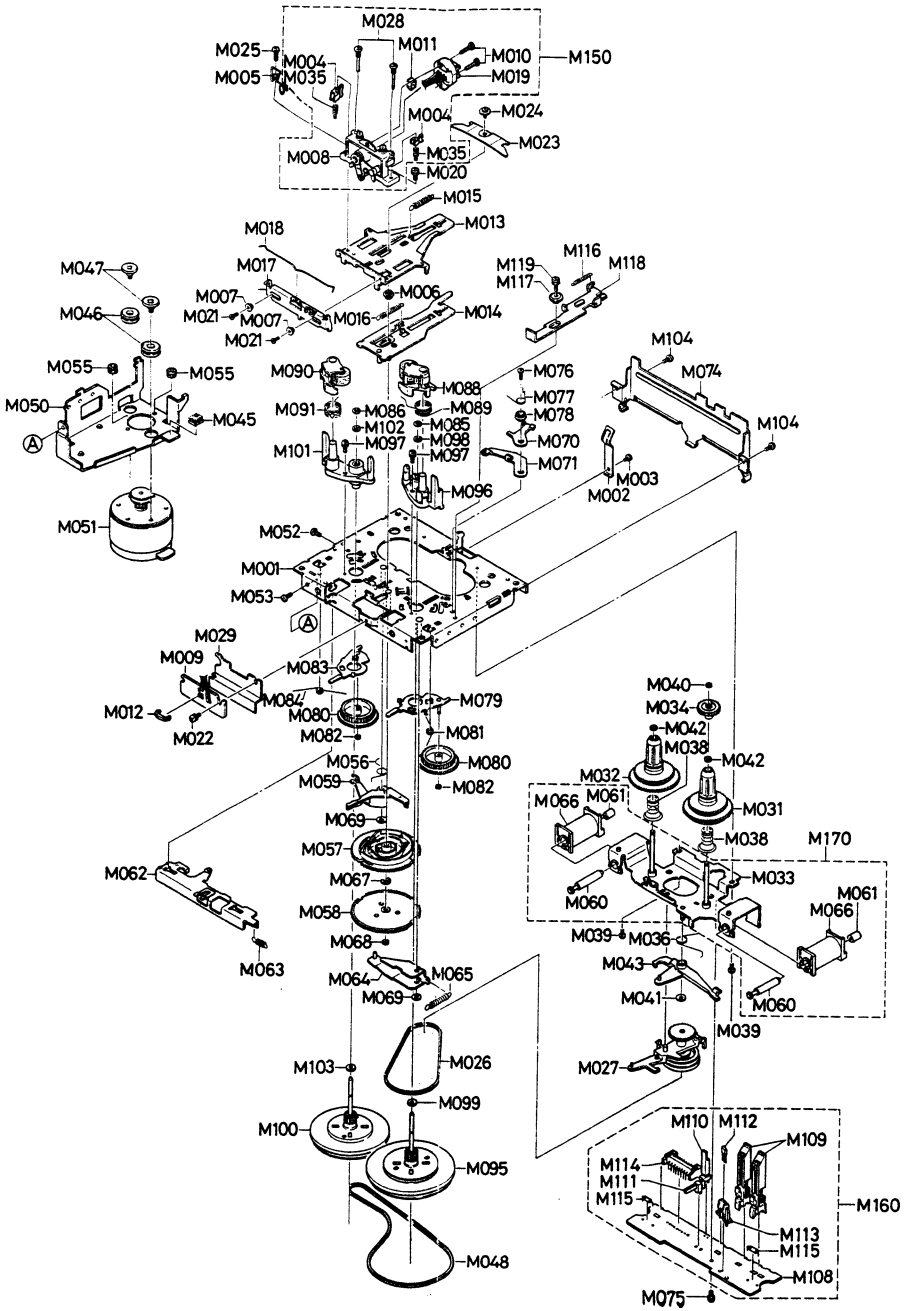
PARTS LIST (TAPE DECK MECHANISM)

DECK A : M02 (: M002) ~ M119
DECK B : M02 (: M202) ~ M119 (: M319)

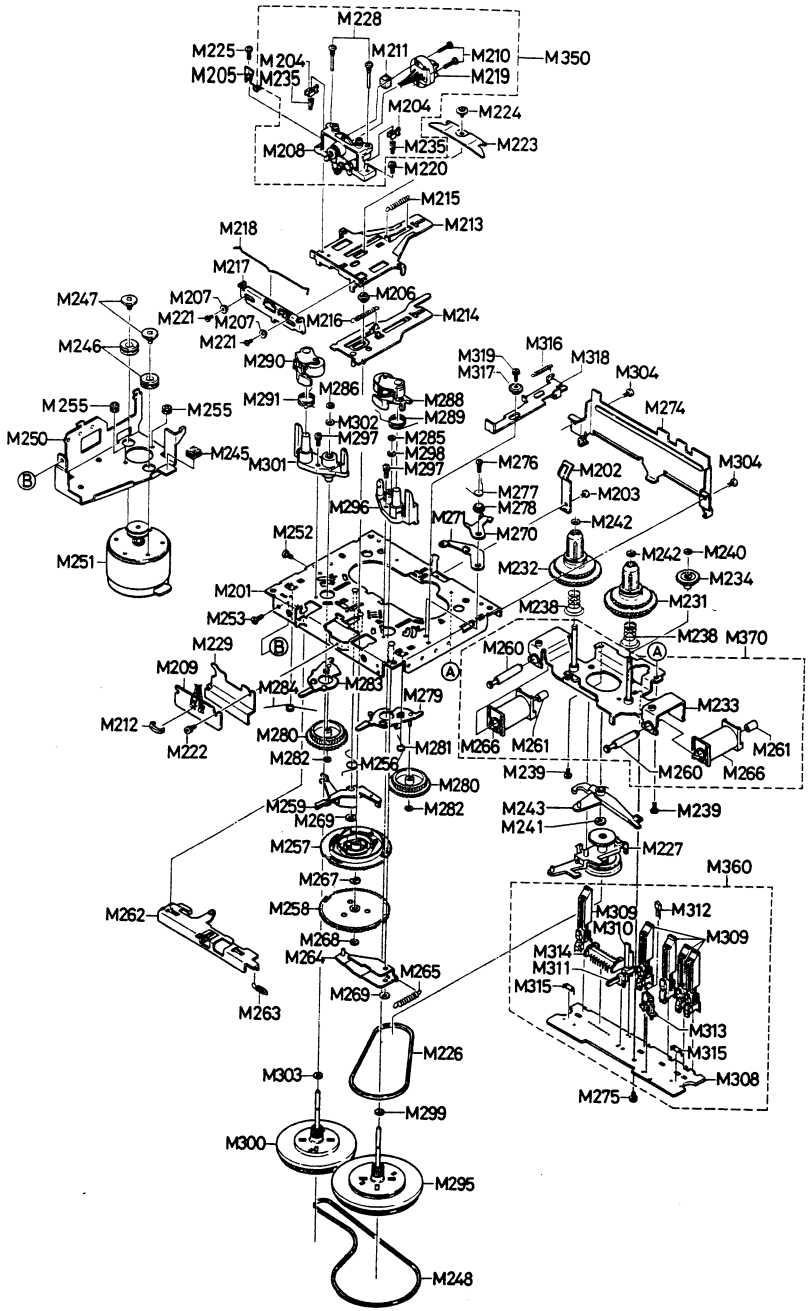
REF. NO.	PART NO.	DESCRIPTION
M 02	4822 492 70934	PLATE, PACK SPRING
M 03	4822 502 13791	SPECIAL SCREW, M2×3
M 04	4822 402 61385	GUIDE, TAPE
M 05	4822 492 70935	SPRING, WIRE, CLUMP (V)
M 06	4822 532 12094	COLLAR, PANEL
M 07	4822 532 12095	COLLAR, CHP LEVER
M 08	4822 402 61389	ASSY, BRACKET-E, HEAD BASE
M 10	4822 502 13792	SPECIAL SCREW, HEAD COLLAR
M 15	4822 492 33282	SPRING, TENS, RC
M 16	4822 492 33283	SPRING, TENS, PANEL
M 18	4822 492 70936	SPRING, WIRE, PINCH ROLLER
M019	4822 249 30175	HEAD, PLAY (DECK A ONLY)
M219	4822 249 10443	HEAD, REC/PLAY (DECK B ONLY)
M 20	4822 502 13793	SPECIAL SCREW, M2×5
M 21	4822 502 13794	SPECIAL SCREW, M17×3
M 22	4822 502 13795	SPECIAL SCREW, M2×5
M 23	4822 492 70937	SPRING, PLATE, PANEL
M 24	4822 502 13796	SPECIAL SCREW, M2×5
M 25	4822 502 13797	SPECIAL SCREW, M2×5
M 26	4822 358 31139	BELT, FLAT, RF
M 27	4822 528 50328	ASSY, PULLEY, RF CLUTCH
M 28	4822 502 13798	SPECIAL SCREW, GUIDE
M 31	4822 528 10825	SAAY, REEL, TAKE UP (F)
M 32	4822 528 10826	SAAY, REEL, TAKE UP (R)
M 34	4822 522 33103	GEAR, FF
M 35	4822 492 52265	SPRING, COMP, GUIDE
M 36	4822 492 42556	SPRING, WIRE, RF TRIGGER ARM
M 38	4822 492 52266	SPRING, COMP, BACK TENTION (R)
M 39	4822 502 13799	SPECIAL SCREW, M2×4
M 40	4822 532 12083	SPECIAL WASHER, 1.2×3×0.25
M 41	4822 532 12084	SPECIAL WASHER, 2.1×5×0.5
M 42	4822 532 12085	SPECIAL WASHER, 1.4×3.2×0.4
M 46	4822 466 93017	CUSHION, RUBBER, MOTOR
M 47	4822 502 13801	SPECIAL SCREW, MOTOR COLLAR
M 48	4822 358 31141	BELT, FLAT, MAIN
M 51	4822 361 30355	ASSY, MOTOR
M 52	4822 502 13799	SPECIAL SCREW, M2×4
M 53	4822 502 13829	SPECIAL SCREW, M2×3.5
M 55	4822 466 93018	CUSHION, RUBBER, MOTOR

REF. NO.	PART NO.	DESCRIPTION
M 56	4822 492 42557	SPRING, WIRE, M TRIGGER ARM
M 57	4822 522 33104	GEAR, M
M 58	4822 522 33105	GEAR, RF CAM
M 65	4822 492 33285	SPRING, TENS, PK LEVER
M 66	4822 281 50161	MAGNET COIL, SOLENOID
M 67	4822 530 70597	SPECIAL WASHER, E-RING, D2
M 68	4822 532 12086	SPECIAL WASHER, 1.55×3.5×0.5
M 69	4822 532 12087	SPECIAL WASHER, 2.1×5×0.4
M 75	4822 502 13802	SPECIAL SCREW, M2×5
M 76	4822 502 13803	SPECIAL SCREW, M2×5
M 77	4822 492 42558	SPRING, WIRE, E STOPPER
M 78	4822 532 12096	COLLAR, E STOPPER
M 80	4822 522 33106	GEAR, T (A)
M 81	4822 492 33283	SPRING, WIRE, TG ARM (F)
M 82	4822 532 12083	SPECIAL WASHER, 1.2×3×0.25
M 84	4822 492 42561	SPRING, WIRE, TG ARM (R)
M 85	4822 532 12093	SPECIAL WASHER, 2.1×3.5×0.5
M 86	4822 532 52354	SPECIAL WASHER, 1.8×3.5×0.5
M 88	4822 528 70749	ASSY, PINCH ROLLER ARM (F)
M 89	4822 492 42562	SPRING, WIRE, P ARM (F)
M 90	4822 528 70751	ASSY, PINCH ROLLER ARM (R)
M 91	4822 492 42563	SPRING, WIRE, P ARM (R)
M 95	4822 528 60386	ASSY, FLYWHEEL (F) (DECK A ONLY)
M 97	4822 502 13804	SPECIAL SCREW, M2×6
M 98	4822 532 12088	SPECIAL WASHER, 1.8×4×0.5
M 99	4822 532 12089	SPECIAL WASHER, 2.3×3.8×0.3
M100	4822 528 60387	ASSY, FLYWHEEL (R)
M102	4822 532 12091	SPECIAL WASHER, 1.55×3.5×0.5
M103	4822 532 12092	SPECIAL WASHER, 2.1×3.5×0.3
M104	4822 502 13799	SPECIAL SCREW, M2×4
M109	4822 271 30757	SWITCH, LEAF
M110	4822 271 30758	SWITCH, LEAF
M111	4822 271 30759	SWITCH, LEAF
M112	4822 209 30134	IC LB9051A, HALL
M115	4822 130 32508	DIODE, DSF10C
M116	4822 492 33286	SPRING, TENS, E LEVER
M117	4822 532 12097	COLLAR, E KICK LEVER
M119	4822 502 13802	SPECIAL SCREW 2 × 5

EXPLODED VIEW (TAPE MECHANISM "DECK A")



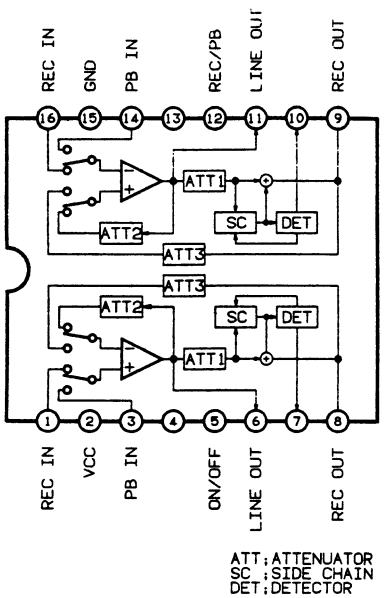
EXPLODED VIEW (TAPE MECHANISM "DECK B")



PHIL-04410 / DRUCK12

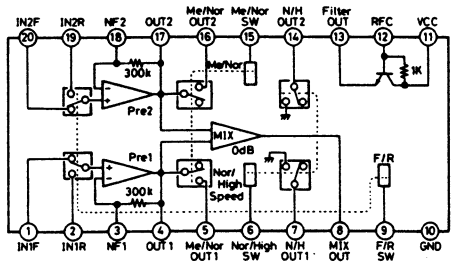
IC BLOCK DIAGRAM (TAPE DECK)

IC351 CXA1100P(Dolby-B Noise Reduction System)

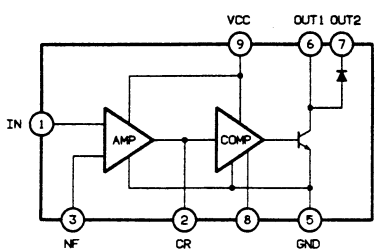


ATT ; ATTENUATOR
SC ; SIDE CHAIN
DET ; DETECTOR

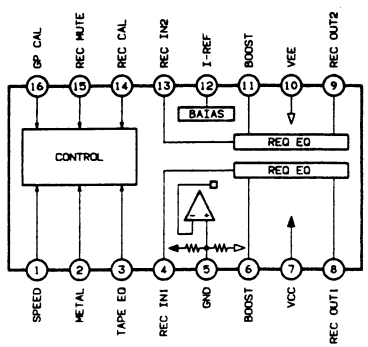
IC371 LA3246(Pre-Amplifier Electrical SW)



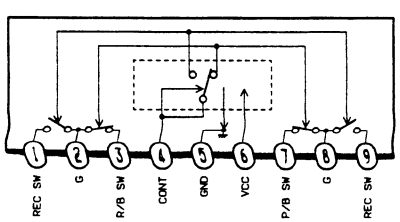
IC362 LA2000(Audio Level Senser)



IC372 CXA1398P(Record Equalizer. Amplifier for Stereo Cassette recorder)



IC363 BA3126N(2-ch Head Switch for Radio Cassette)

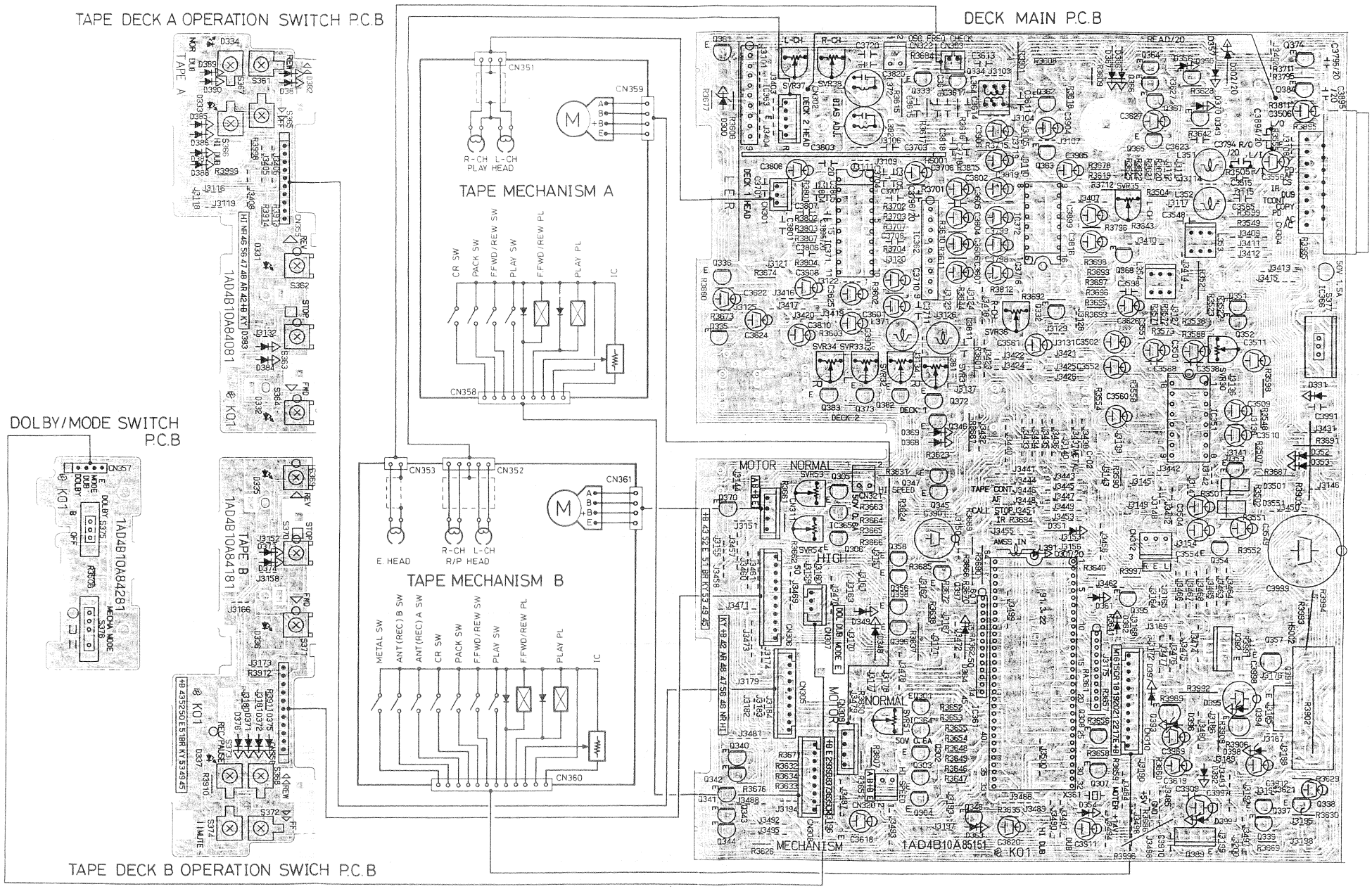


IC BLOCK DIAGRAM (TAPE DECK)

IC361 LC66508-4119(Micro Processor)

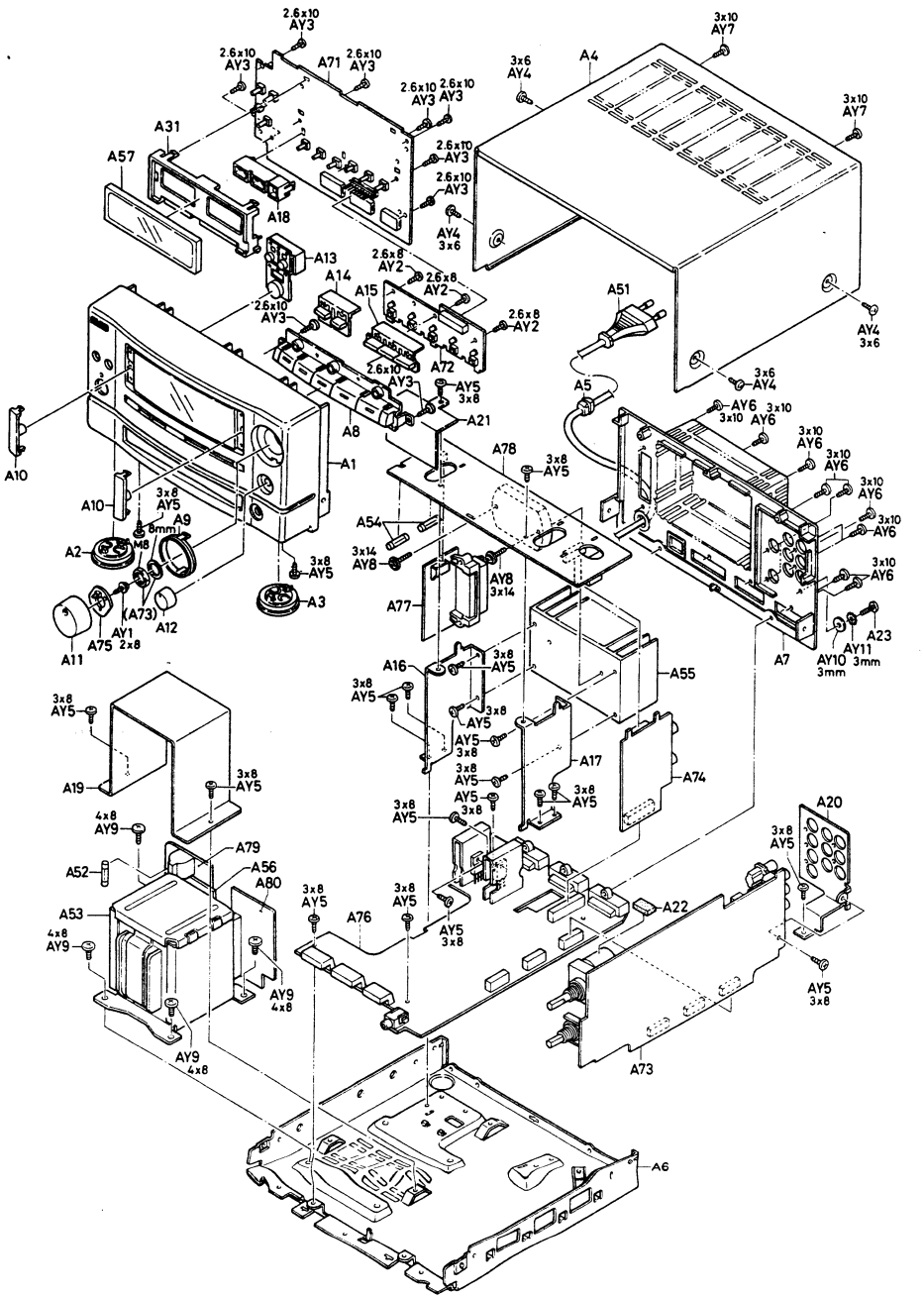
No.	NAME	DESCRIPTION	LOW	HIGH	I/O
1	PDOWN	Power Down	ON		I
2	DATA	Connect to +5v through the resistor, 10k ohm.			
3	CLK	Ground			
4	POWER	Connect to +5v through the resistor, 10k ohm.			
5	PMUTE	Play Mute control	OFF	ON	O
6	RMUTE	Record Mute control	OFF	ON	O
7	PLAY A/B	A Mechanism, B Mechanism Play signal control	PLAY A	PLAY B	O
8	AMS IN	AMS signal input	non signal	signal	I
9	A-FF LED	Ground			
10	A-RWD LED	Connect to +5v through the resistor, 10k ohm.			
11	B-FF LED	Ground			
12	B-RWD LED	Connect to +5v through the resistor, 10k ohm.			
13	A-REV LED	A Mechanism Reverse LED	ON		O
14	B-REV LED	B Mechanism Reverse LED	ON		O
15	A-ANTREC	A Anti-Record switch for B Mechanism Forward	REC	ANT REC	I
16	B-ANTREC	B Anti-Record switch for B Mechanism Reverse	REC	ANT REC	I
17	B-REEL	B Mechanism Reel Pulse			I
18	B-PACK SW	Detecting terminal for Cassette in B Mechanism	being	not	I
19	B-FF/RWD SW	Detecting terminal for FF, RWD mode in B Mechanism	FF	RWD	I
20	B-PLAY SW	Detecting terminal for Play mode in B Mechanism	PLAY		I
21	B-P2	B Mechanism FF, RWD Plunger control	ON		O
22	B-P1	B Mechanism Play Plunger control	ON		O
23	B-MOTOR	B Mechanism Motor switching	ON		O
24	B-HIGH	B Mechanism Motor speed switching	LOW	HIGH	O
25	A/B LED	Open			
26	DUB LED	Normal speed Dubbing LED	ON		O
27	HDUB	High speed Dubbing LED	ON		O
28	IRIND	Open			
29	A-REEL	A Mechanism Reel Pulse			I
30	TEST	Ground			
31	VSS	Ground			
32	OSC1	Pin for connection to 4.19MHz Oscillation			I

No.	NAME	DESCRIPTION	LOW	HIGH	I/O
33	OSC2	Pin for connection to 4.19MHz Oscillation			O
34	RESET	Input terminal of system Reset			I
35	A-PACK SW	Detecting terminal for Cassette in A Mechanism	being	not	I
36	A-FF/RWD SW	Detecting terminal for FF, RWD mode in A Mechanism	FF	RWD	I
37	A-PLAY SW	Detecting terminal for Play mode in A Mechanism	PLAY		I
38	A-P2	A Mechanism FF, RWD Plunger control	ON		O
39	A-P1	A Mechanism Play Plunger control	ON		O
40	A-MOTOR	A Mechanism Motor switching	ON		O
41	A-HIGH	A Mechanism Motor speed switching	LOW	HIGH	O
42	A-FOW LED	A Mechanism Forward LED	ON		O
43	B-FOW LED	B Mechanism Forward LED	ON		O
44	REC LED	B Mechanism Record LED	ON		O
45	MUTE LED	B Mechanism Record Mute LED	ON		O
46	KEY1	Key 1 : FPLAY (A Forward Play)			I
47	KEY2	Key 1 : RPLAY (A Reverse Play)			I
48	KEY3	Key 1·2 : STOP (A Stop) Key 1·3 : FF (A Fast Forward) Key 2·3 : REW (A Rewind)			I
49	KEY8	Key 5·6 : REW (B Rewind) Key 7 : REC (A Record) Key 8 : MUTE (A Record Mute)			I
50	KEY4	Key 4 : FPLAY (B Forward Play)			I
51	KEY5	Key 5 : RPLAY (B Reverse Play)			I
52	KEY6	Key 4·5 : STOP (B Stop)			I
53	KEY7	Key 4·6 : FF (B Fast Forward)			I
54	DIR	Direction switch Low : ⇆, Mid : ⊃, Hi : ⊂⊃			I
55	TIMER	Timer standby switch Low : PLAY, Mid : OFF, Hi : REC			I
56	KEY9	Key 1·9 : DUB (Normal speed) Key 3·9 : HDUB (High speed) Key 4·9 : CDUB (Normal speed CD) Key 6·9 : HCDUB (High speed CD)			I
57	KEYOUT	Switching to segment diodes & KEYIN			O
58	RESET	Counter Reset switch			
59	IRIN	Remocon data signal			I
60	DUBIN	Dubbing control input			I
61	CSTOP	Call Stop input			I
62	DUBOUT	Dubbing control output			O
63	AF	Auto Function control			O
64	VDD	Power Source			


TAPE DECK A OPERATION SWITCH P.C.B
DECK MAIN P.C.B
TAPE MECHANISM A
CR SW
PACK SW
F.FWD/REW SW
PLAY SW
F.FWD/REW PL
PLAY PL
IC
R-CH L-CH
PLAY HEAD
CN351
CN359
CN358
DOLBY/MODE SWITCH P.C.B
TAPE MECHANISM B
METAL SW
ANT(REC) B SW
ANT(REC) A SW
CR SW
PACK SW
F.FWD/REW SW
PLAY SW
F.FWD/REW PL
PLAY PL
IC
E. HEAD
R-CH L-CH
R/P HEAD
CN353
CN352
CN361
CN360
MOTOR NORMAL
HIGH
MECHANISM
1AD4B10A85151
TAPE DECK B OPERATION SWICH P.C.B

AMPLIFIER UNIT

EXPLODED VIEW (AMPLIFIER)



PARTS LIST (AMPLIFIER)

REF. NO.	PART NO.	DESCRIPTION
A1	4822 426 51498	ASSY, PANEL, FRONT
A2	4822 462 41839	ASSY, FOOT, FRONT-L
A3	4822 462 41841	ASSY, FOOT, FRONT-R
A5	4822 532 61205	FIXER, AC CORD
A7	4822 421 60171	ASSY, PANEL, REAR/20/21
	4822 421 60175	ASSY, PANEL, REAR/25
A8	4822 410 61482	ASSY, BUTTON, FUNCTION
A9	4822 454 12748	ESCUTCHEON, VR ROUND
A10	4822 454 12747	ESCUTCHEON, WINDOW FIX
A11	4822 413 41666	KNOB, ROTARY, VOLUME
A12	4822 413 31667	KNOB, ROTARY, BALANCE
A13	4822 410 61436	BUTTON, POWER
A14	4822 410 61437	BUTTON, SURRUND
A15	4822 410 61438	BUTTON, GRAPHIC EQUALIZER
A18	4822 404 10854	REFLECTOR, SOUND P., LED
A23	4822 502 13805	SPECIAL SCREW, PHONO EARTH
AY 1	4822 502 13782	SPECIAL SCREW 2 × 8
AY 8	4822 502 13783	SPECIAL SCREW 3 × 14
AY10	4822 532 12079	SPECIAL WASHER 3 × 10 × 1
AY11	4822 532 11388	T. L. WASHER (OUT) TW3

REF. NO.	PART NO.	DESCRIPTION
A52	4822 070 31252	FUSE, 250V 1.25A, F4900
A53	4822 146 21635	POWER TRANSFORMER, PT400/20
	4822 146 21643	POWER TRANSFORMER, PT400/25
A54	4822 253 30146	FUSE, 250V 3.15A, F4700·4800

REF. NO.	PART NO.	DESCRIPTION
A71		ASSY, PCB, FRONT
A31	4822 403 70437	MOUNT-E, FL
A57	4822 130 91014	FLUORESCENT TUBE, DISPLAY
D4005	4822 130 33305	DIODE, 1SS133
D4006	4822 130 33305	DIODE, 1SS133
D4007	4822 130 33305	DIODE, 1SS133
D4008	4822 130 33305	DIODE, 1SS133
D4009	4822 130 33305	DIODE, 1SS133
D4010	4822 130 33305	DIODE, 1SS133
D4011	4822 130 33305	DIODE, 1SS133
D4012	4822 130 33305	DIODE, 1SS133
D4413	4822 130 33305	DIODE, 1SS133
D4414	4822 130 33305	DIODE, 1SS133
D4908	4822 130 82703	ZENER DIODE, MTZ-5.1B
D4910	4822 130 82675	LED, SLZ-382F-03-AB-T1
D4911	4822 130 82675	LED, SLZ-382F-03-AB-T1
D4912	4822 130 82675	LED, SLZ-382F-03-AB-T1
D4913	4822 130 82675	LED, SLZ-382F-03-AB-T1
D4914	4822 130 82657	DIODE, DAN803
D4916	4822 130 82676	LED, SLZ-190B-13-T1
IC400	4822 209 30192	IC, XRA14741
IC401	4822 209 30192	IC, XRA14741
IC402	4822 209 71782	IC, LC7565A
Q4403	4822 130 61189	TR DTC114TS
Q4404	4822 130 61189	TR DTC114TS
RA401	4822 111 91513	RESISTOR 100K ×8
RA402	4822 111 91644	RESISTOR 100K ×9
RA403	4822 111 91397	RESISTOR 100K ×13
S4906	4822 276 13125	SWITCH, TACT, GEQ UP
S4907	4822 276 13125	SWITCH, TACT, PREQ
S4908	4822 276 13125	SWITCH, TACT, GEQ DN
S4910	4822 276 13125	SWITCH, TACT, SURR
S4911	4822 276 13125	SWITCH, TACT, D'BASS
S4912	4822 276 13125	SWITCH, TACT, MEMO
S4913	4822 276 13125	SWITCH, TACT, PRESET
S4914	4822 276 13125	SWITCH, TACT, POWER

REF. NO.	PART NO.	DESCRIPTION
A72		ASSY, PCB, FUNC SW
D4903	4822 130 82677	LED, SLP-138C-51-B, DECK
D4904	4822 130 82677	LED, SLP-138C-51-B, TUNER
D4905	4822 130 82677	LED, SLP-138C-51-B, CD
D4906	4822 130 82677	LED, SLP-138C-51-B, PHONO
D4907	4822 130 82677	LED, SLP-138C-51-B, AV
S4901	4822 276 20514	SWITCH, TACT, DECK
S4902	4822 276 20514	SWITCH, TACT, TUNER
S4903	4822 276 20514	SWITCH, TACT, CD
S4904	4822 276 20514	SWITCH, TACT, PHONO
S4905	4822 276 20514	SWITCH, TACT, AV

PARTS LIST (AMPLIFIER)

REF. NO.	PART NO.	DESCRIPTION
A73		ASSY, PCB, PRE-AMP
CN465	4822 290 61039	SOCKET, 6P (RCA)
D4057	4822 130 42112	DIODE, 1S2473
D4058	4822 130 82633	DIODE, GMA01
D4953	4822 130 82666	ZENER DIODE, MTZ-4.7B
D4954	4822 130 82666	ZENER DIODE, MTZ-4.7B
D4955	4822 130 82703	ZENER DIODE, MTZ-5.1B
D4956	4822 130 80318	ZENER DIODE, MTZ6.8C
D4957	4822 130 80318	ZENER DIODE, MTZ6.8C
D4958	4822 130 82667	ZENER DIODE, MTZ-5.1C
IC451	4822 209 63181	IC XRU4051B
IC452	4822 209 63181	IC XRU4051B
IC453	4822 209 73303	IC RC4558S-D
IC454	4822 209 73303	IC RC4558S-D
IC455	4822 209 30193	IC LB1641
IC456	4822 209 71783	IC LC7522
IC457	4822 209 73303	IC RC4558S-D
IC472	4822 209 73303	IC RC4558S-D
L451	4822 157 63376	CHOCK COIL
Q4056	4822 130 42594	TR DTC144ES
Q4057	4822 130 42594	TR DTC144ES
Q4058	4822 130 61227	TR DTC144ES
Q4059	4822 130 61227	TR DTC144ES
Q4500	4822 130 42298	TR 2SC1740S-S
Q4502	4822 130 42298	TR 2SC1740S-S
Q4503	4822 130 42298	TR 2SC1740S-S
Q4504	4822 130 42298	TR 2SC1740S-S
Q4505	4822 130 42298	TR 2SC1740S-S
Q4506	4822 130 42298	TR 2SC1740S-S
Q4507	4822 130 42298	TR 2SC1740S-S
Q4508	4822 130 42298	TR 2SC1740S-S
Q4509	4822 130 42298	TR 2SC1740S-S
Q4510	4822 130 42298	TR 2SC1740S-S
Q4600	4822 130 42298	TR 2SC1740S-S
Q4602	4822 130 42298	TR 2SC1740S-S
Q4503	4822 130 42298	TR 2SC1740S-S
Q4604	4822 130 42298	TR 2SC1740S-S
Q4605	4822 130 42298	TR 2SC1740S-S
Q4606	4822 130 42298	TR 2SC1740S-S
Q4607	4822 130 42298	TR 2SC1740S-S
Q4608	4822 130 42298	TR 2SC1740S-S
Q4609	4822 130 42298	TR 2SC1740S-S
Q4610	4822 130 42298	TR 2SC1740S-S
⚠ R4956	4822 116 60314	FUSIBLE RES 10 J-1/4W
RA456	4822 111 91513	RESISTOR 100K ×8
RA457	4822 111 91513	RESISTOR 100K ×8
VR451	4822 100 11772	VR, ROTARY, 250K, BALANCE
VR452	4822 100 11773	VR, ROTARY, 50K, MAIN

REF. NO.	PART NO.	DESCRIPTION
A74		ASSY, PCB, VIDEO
CN455	4822 290 61041	SOCKET, 1P (RCA), AV-IN
CN483	4822 290 61041	SOCKET, 1P (RCA), MONITOR
D4451	4822 130 82666	ZENER DIODE, MTZ-4.7B
D4454	4822 130 33305	DIODE, 1SS133
IC458	4822 209 61677	IC XRU4052B
Q4452	4822 130 62293	TR 2SA933S-R
Q4453	4822 130 42298	TR 2SC1740S-S
⚠ R4461	4822 116 60314	FUSIBLE RES 10 J-1/4W

REF. NO.	PART NO.	DESCRIPTION
A75		ASSY, PCB, VOL LED
D4075	4822 130 82678	LED SLP-190B-14-AB-T1

REF. NO.	PART NO.	DESCRIPTION
A76		ASSY, PCB, MICON
CN470	4822 267 31377	JACK, HEADPHONE
CN475	4822 290 61038	SOCKET, 15P, TO DECK
CN476	4822 290 61035	SOCKET, 13P, TO TUNER
CN477	4822 290 61036	SOCKET, 15P, TO CD
D4055	4822 130 82633	DIODE, GMA01
D4056	4822 130 82633	DIODE, GMA01
D4059	4822 130 33305	DIODE, 1SS133
D4060	4822 130 33305	DIODE, 1SS133
D4062	4822 130 32508	DIODE, DSF10C
D4063	4822 130 42112	DIODE, 1S2473
D4065	4822 130 42112	DIODE, 1S2473
D4068	4822 130 42112	DIODE, 1S2473
D4076	4822 130 82633	DIODE, GMA01
D4077	4822 130 42112	DIODE, 1S2473
D4078	4822 130 42112	DIODE, 1S2473
D4080	4822 130 82633	DIODE, GMA01
D4081	4822 130 82633	DIODE, GMA01
D4082	4822 130 42112	DIODE, 1S2473
D4086	4822 130 82633	DIODE, GMA01
D4087	4822 130 82633	DIODE, GMA01
D4088	4822 130 33305	DIODE, 1SS133
D4089	4822 130 82634	DIODE, DS442X
D4951	4822 130 82668	ZENER DIODE, MTZ15C
D4952	4822 130 82669	ZENER DIODE, MTZ15B
D4959	4822 130 32508	DIODE, DSF10C
D4960	4822 130 32508	DIODE, DSF10C
D4961	4822 130 32508	DIODE, DSF10C
D4962	4822 130 32508	DIODE, DSF10C
IC459	4822 209 30197	IC LC66506B-4582
⚠ IC461	4822 209 30194	IC RC78M05FA
⚠ IC462	4822 209 30195	IC RC7812FA
L452	4822 157 63357	FILTER, CHOCK(RIPPLE)
Q4051	4822 130 62293	TR 2SA933S-R
Q4052	4822 130 62772	TR DTC113ZS
Q4054	4822 130 60588	TR DTC114ES
Q4055	4822 130 61227	TR DTA114ES

PARTS LIST (AMPLIFIER)

REF. NO.	PART NO.	DESCRIPTION
Q4060	4822 130 60588	TR DTC114ES
Q4061	4822 130 62766	TR DTA123YS
Q4062	4822 130 42298	TR 2SC1740S-S
Q4063	4822 130 62503	TR DTC114YS
Q4064	4822 130 62503	TR DTC114YS
Q4065	4822 130 61227	TR DTA114ES
Q4066	4822 130 61189	TR DTC114TS
Q4951	4822 130 61442	TR 2SD1913-S
Q4952	4822 130 62774	TR 2SB514-E
R4586	4822 111 90724	CARBON 330 JB 1/2W, FLAME PROOF
R4686	4822 111 90724	CARBON 330 JB 1/2W, FLAME PROOF
⚠ R4960	4822 116 60463	OXIDE-MT 56 JA 2W
⚠ R4961	4822 116 60463	OXIDE-MT 56 JA 2W
⚠ R4962	4822 116 83072	OXIDE-MT 0.33 JA 2W
⚠ R4964	4822 116 60314	FUSIBLE RES 10 J-1/4W
⚠ R4965	4822 116 60307	FUSIBLE RES 1 J-1/4W
⚠ R4977	4822 115 90313	OXIDE-MT 120 JA 2W
RA451	4822 111 91185	RESISTOR, 10K ×4
RA452	4822 111 92034	RESISTOR, 10K ×15
RA453	4822 111 92034	RESISTOR, 10K ×15
RA454	4822 111 91276	RESISTOR, 10K ×10
RA455	4822 111 91185	RESISTOR, 10K ×4
RA458	4822 111 91276	RESISTOR, 10K ×10
RA459	4822 111 91677	RESISTOR, 10K ×3
X4051	4822 242 80324	RESONATOR, 4.19MHZ, FOR IC459

REF. NO.	PART NO.	DESCRIPTION
A77		ASSY, PCB, SP TERMINAL
CN404	4822 290 61043	TERMINAL, 4P, EXT-SP
R4706	4822 052 11568	CARBON 5.6 JB 1/2W, FLAME PROOF
R4806	4822 052 11568	CARBON 5.6 JB 1/2W, FLAME PROOF

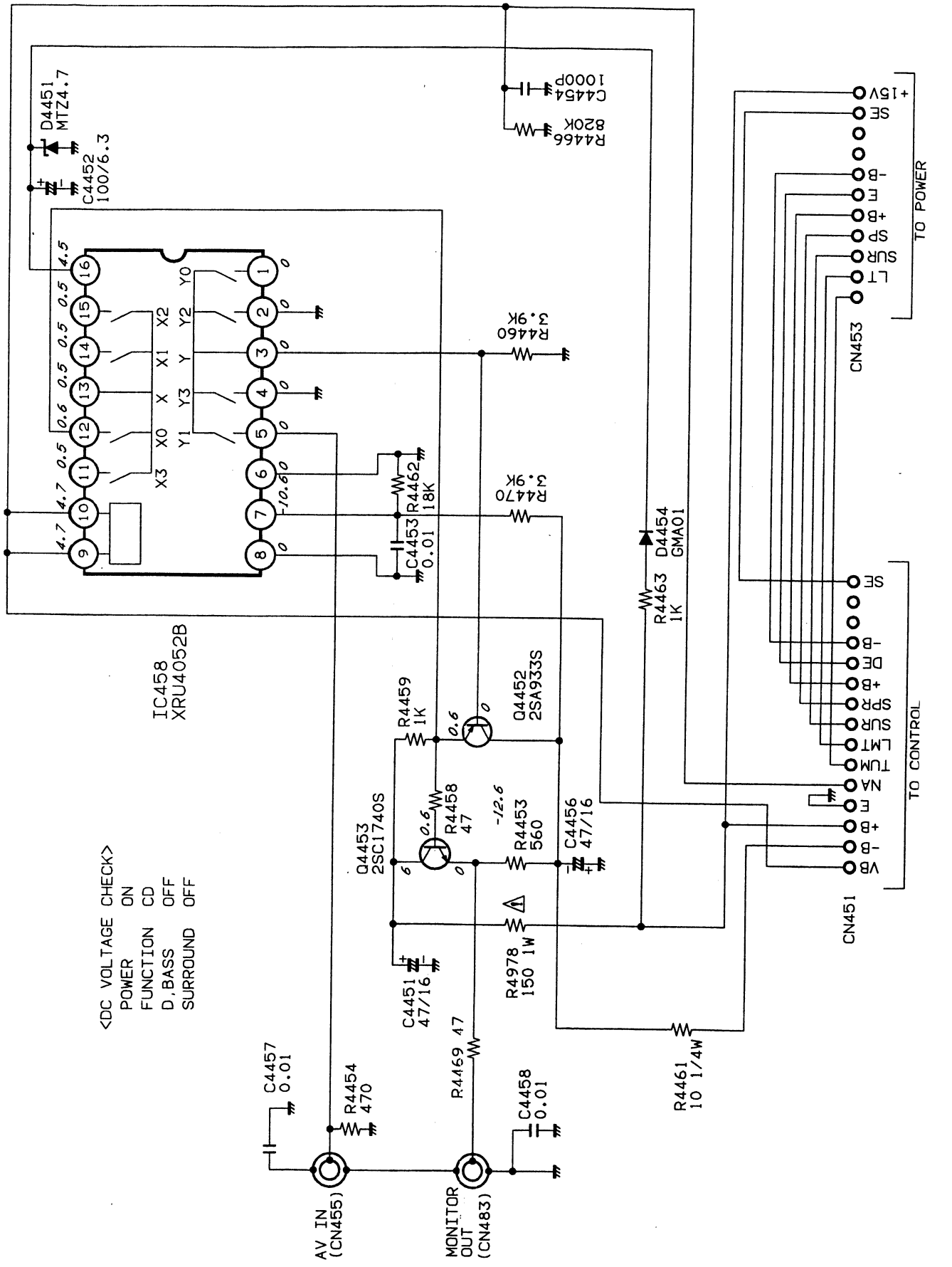
REF. NO.	PART NO.	DESCRIPTION
A78		ASSY, PCB, MAIN AMP
D4400	4822 130 33305	DIODE, 1SS133
D4401	4822 130 33305	DIODE, 1SS133
D4402	4822 130 82666	ZENER DIODE, MTZ4.7B
D4403	4822 130 82666	ZENER DIODE, MTZ4.7B
D4404	4822 130 33305	DIODE, 1SS133
D4415	4822 130 82634	DIODE, DS442X
D4416	4822 130 42112	DIODE, 1S2473
⚠ D4900	4822 130 82658	DIODE, RBV-402LF-A
⚠ IC403	4822 209 30111	IC STK4152MK2
Q4400	4822 130 62769	TR DTA114YS
Q4401	4822 130 62503	TR DTC114YS
Q4402	4822 130 60754	TR 2SC3331-U
Q4700	4822 130 42298	TR 2SC1740S-S
Q4701	4822 130 42298	TR 2SC1740S-S
Q4800	4822 130 42298	TR 2SC1740S-S
Q4801	4822 130 42298	TR 2SC1740S-S
R4711	4822 116 53751	CARBON 2.2K JB 1/2W FLAME PROOF
R4811	4822 116 53751	CARBON 2.2K JB 1/2W FLAME PROOF
⚠ R4900	4822 111 90744	FUSIBLE RES 100 J-1/4W
⚠ R4901	4822 111 90744	FUSIBLE RES 100 J-1/4W
RE900	4822 280 20487	RELAY, 2-MAKE

REF. NO.	PART NO.	DESCRIPTION
A79		ASSY, PCB, PT PRI
L4900	4822 158 10874	INDUCTOR, FERITE (20 : NOT USED)

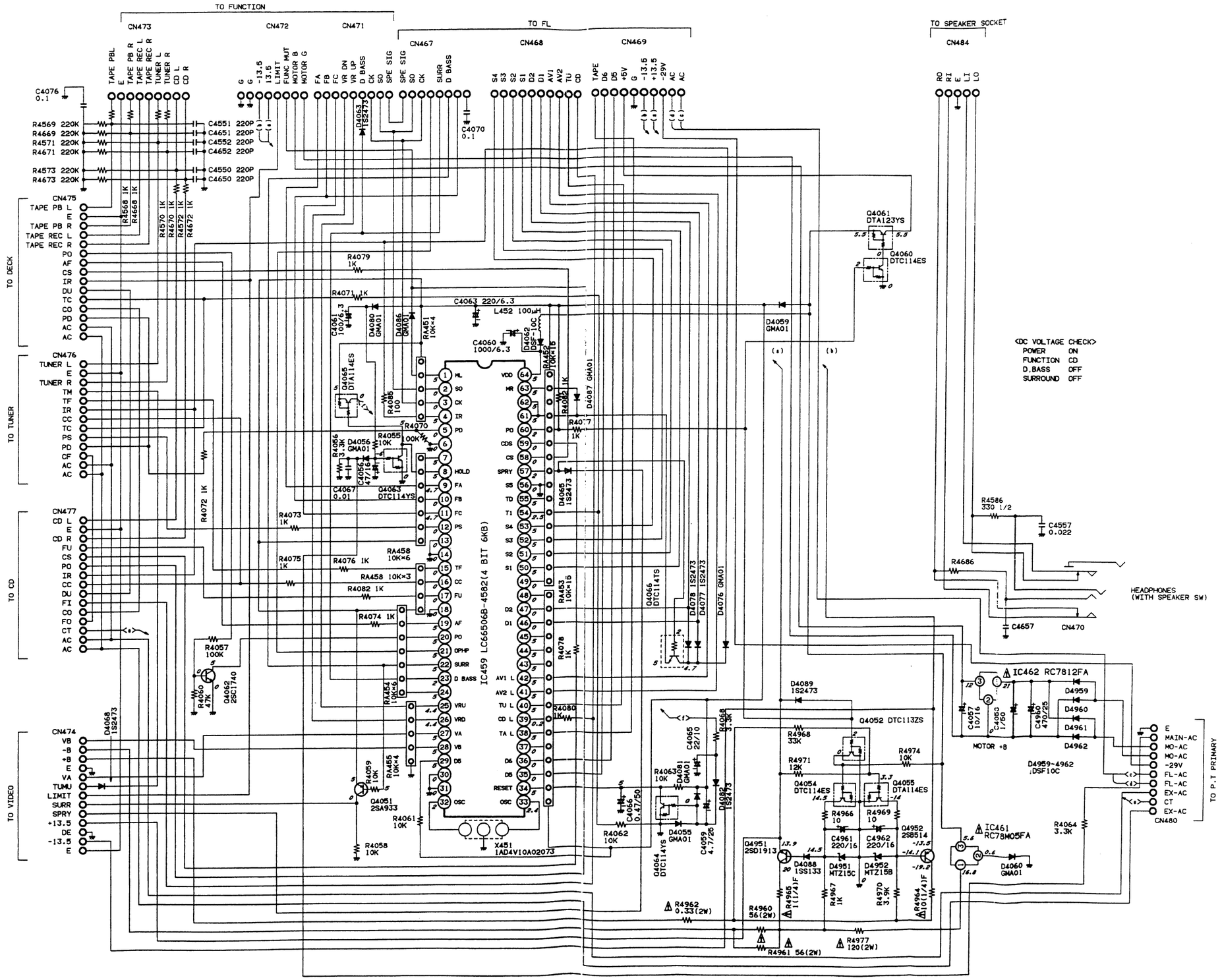
REF. NO.	PART NO.	DESCRIPTION
A80		ASSY, PCB, PT SEC
D4901	4822 130 32816	DIODE, 1SR35-200A
⚠ D4902	4822 130 82671	DIODE, GZS30Z
D4915	4822 130 32816	DIODE, 1SR35-200A
⚠ ICP463	4822 252 51024	IC-PROTECTOR, ICP-F75
⚠ ICP464	4822 252 51024	IC-PROTECTOR, ICP-F75
⚠ ICP471	4822 252 20266	IC-PROTECTOR, ICP-F25
Q4900	4822 130 62775	TR 2SB560-F-MP
⚠ R4911	4822 111 91464	RESISTOR, 3.9 J-1/2W
⚠ R4975	4822 116 60307	FUSIBLE RES 1 J-1/4W
⚠ R4981	4822 111 90744	FUSIBLE RES 100 J-1/4W

MEMO

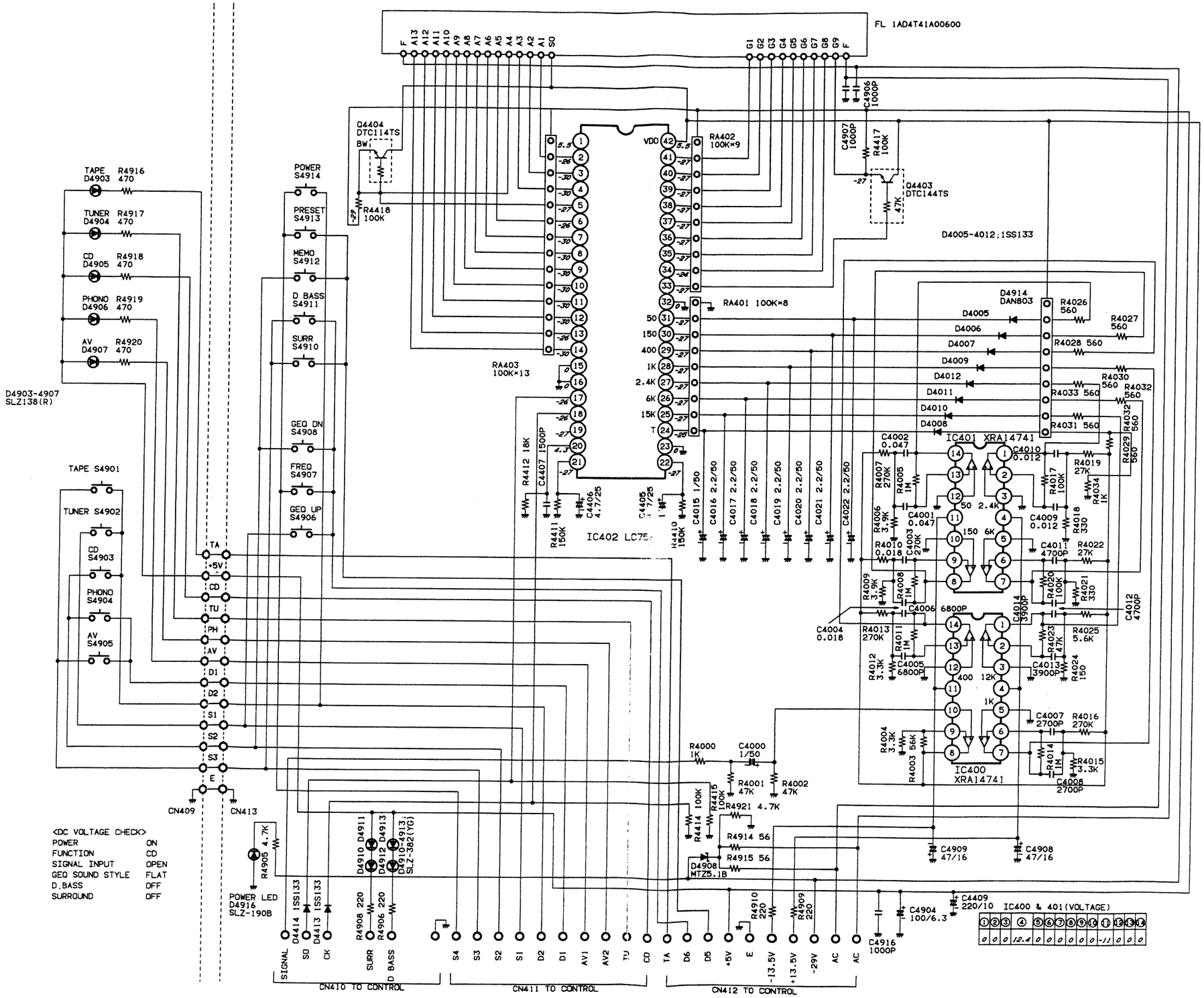
SCHEMATIC DIAGRAM (AMPLIFIER - VIDEO)



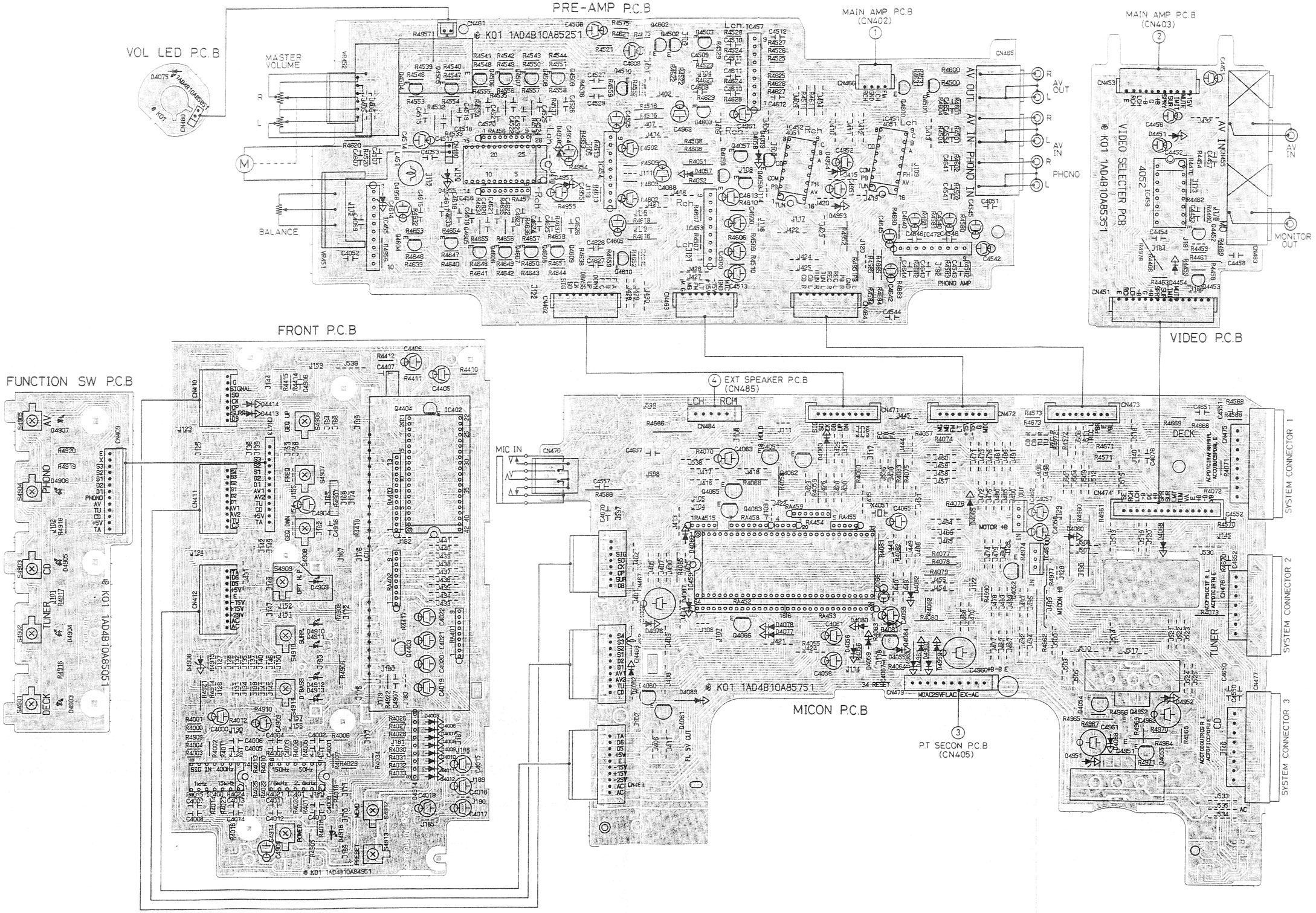
SCHEMATIC DIAGRAM (AMPLIFIER - CONTROL)



SCHEMATIC DIAGRAM (AMPLIFIER - FL)

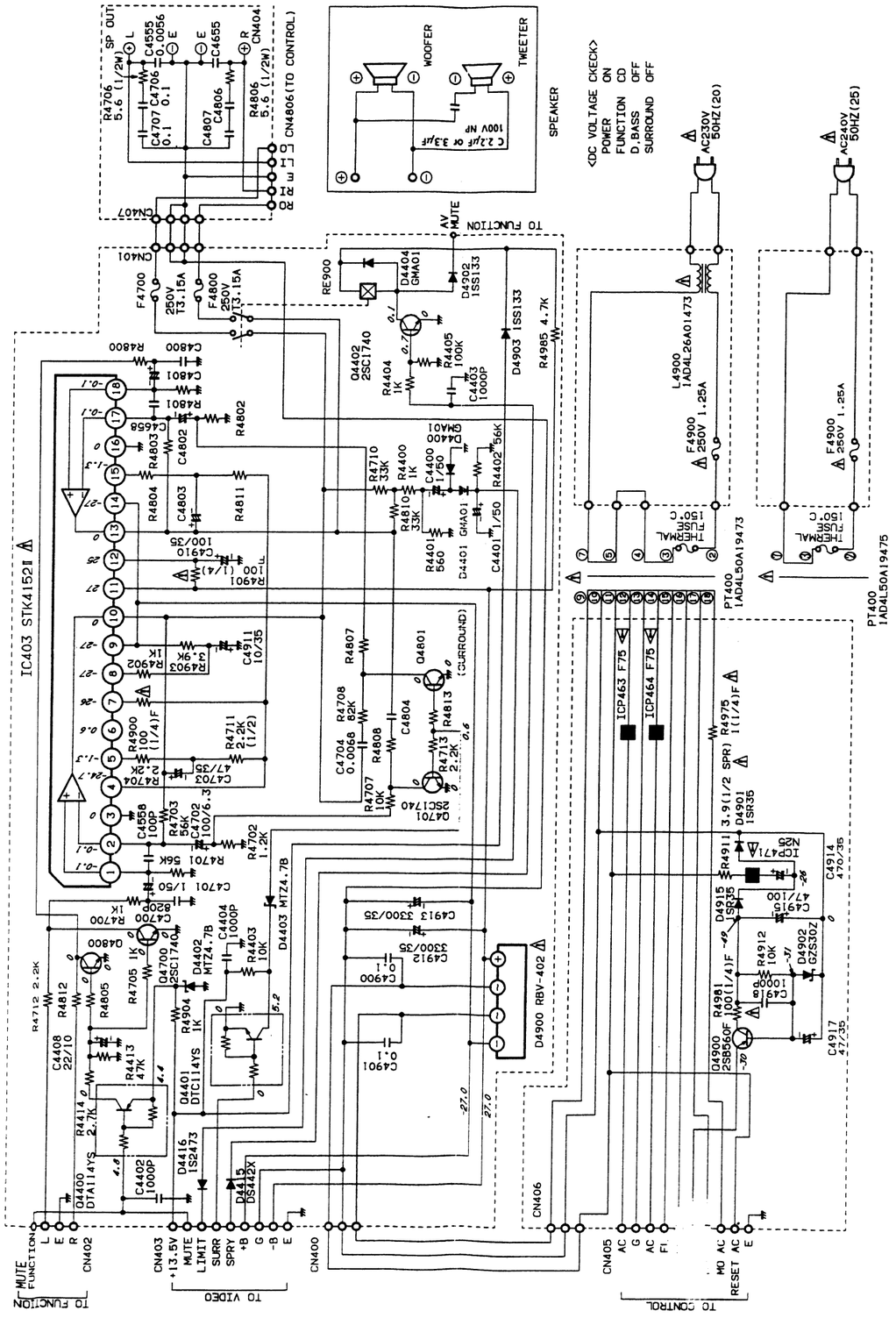


WIRING DIAGRAM (AMPLIFIER)

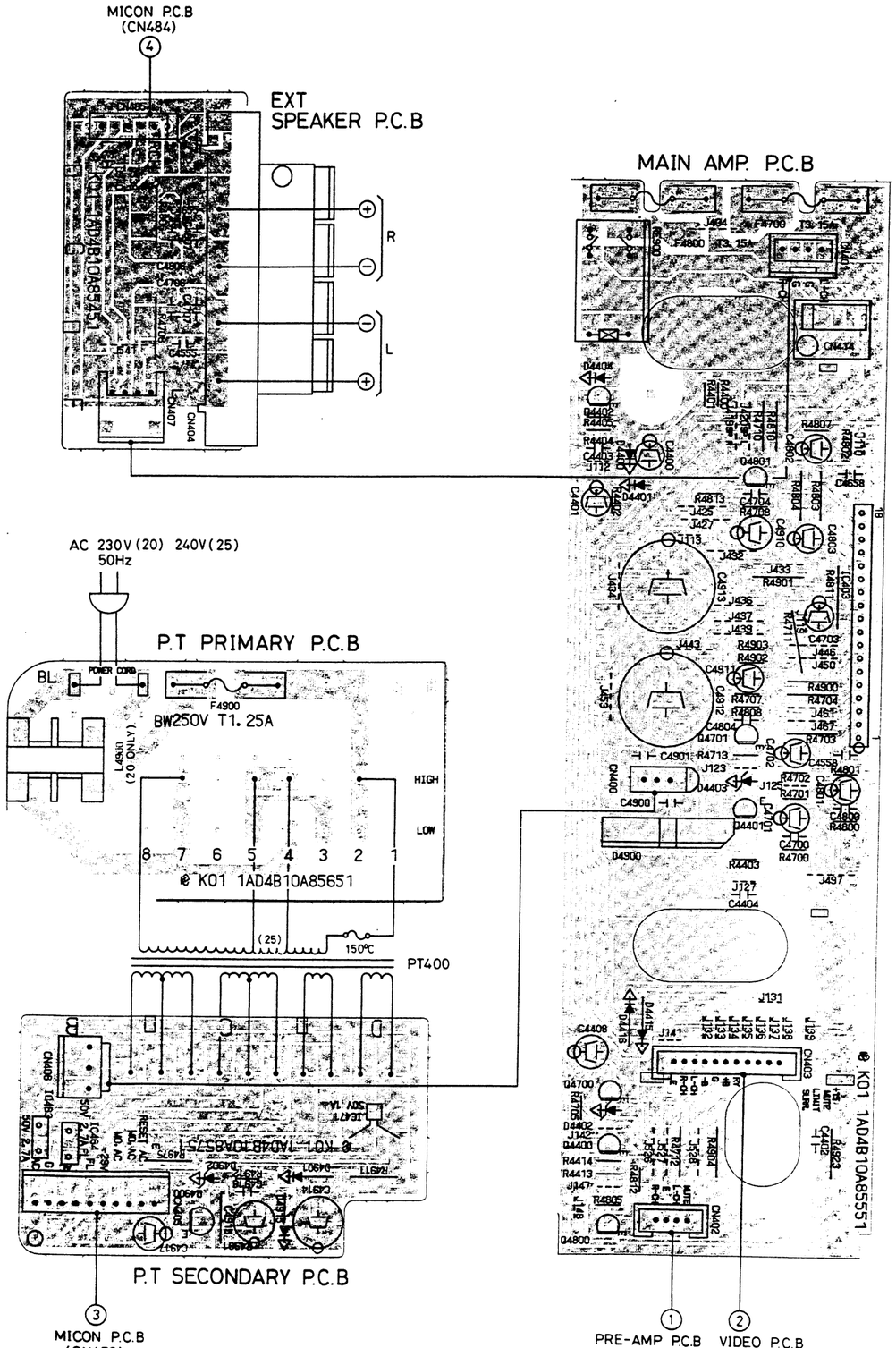


L-04410 / DRUCK19

SCHEMATIC DIAGRAM (AMPLIFIER - POWER)

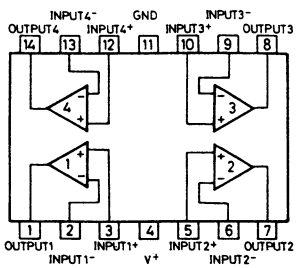


WIRING DIAGRAM (AMPLIFIER - POWER)

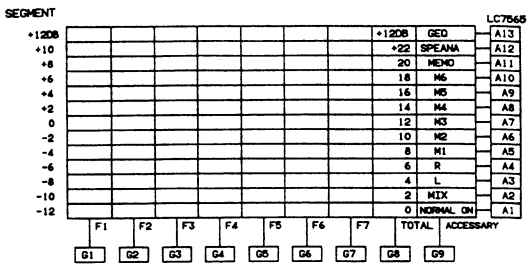


IC BLOCK DIAGRAM (AMPLIFIER)

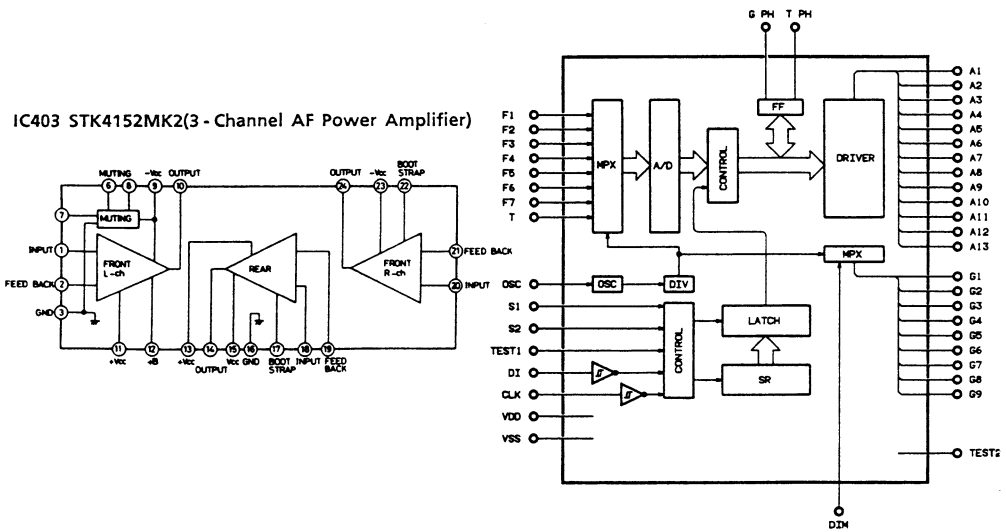
IC400 · 401 XRA14741(Dual Operational Amplifier)



IC402 LC7565A(Flurecent Tube Display Driver)


SEGMENT
LC7565
+12DB GEQ A13
+10 +22 SPEANA A12
+8 20 MEMO A11
+6 18 M6 A10
+4 16 M5 A9
+2 14 M4 A8
0 12 M3 A7
-2 10 M2 A6
-4 8 M1 A5
-6 6 R A4
-8 4 L A3
-10 2 MIX A2
-12 0 NORMAL ON A1
F1 F2 F3 F4 F5 F6 F7 TOTAL ACCESSARY
G1 G2 G3 G4 G5 G6 G7 G8 G9

IC403 STK4152MK2(3 - Channel AF Power Amplifier)

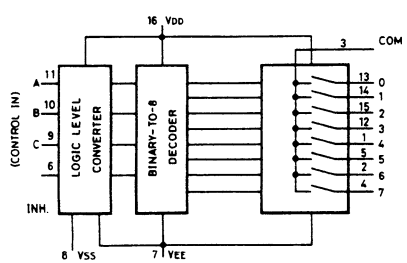


IC451 · 452 XRU4051B(Signal 8-Channel Multiplexer / DeMultiplexer)

TRUTH TABLE

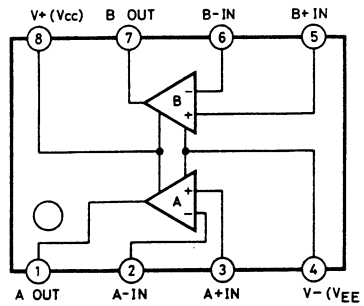
CONTROL INPUTS				"ON" CHANNEL		
INHIBIT	C△	B	A	TC4051BP	TC4052BP	TC4053BP
L	L	L	L	0	0X.0Y	0X.0Y.0Z
L	L	L	H	1	1X.0Y	1X.0Y.0Z
L	L	H	L	2	2X.2Y	0X.1Y.0Z
L	L	H	H	3	3X.3Y	1X.1Y.0Z
L	H	L	L	4	—	0X.0Y.1Z
L	H	L	H	5	—	1X.0Y.1Z
L	H	H	L	6	—	0X.1Y.1Z
L	H	H	H	7	—	1X.1Y.1Z
H	※	※	※	NONE	NONE	NONE

※ Don't care. △ Except TC4052BP

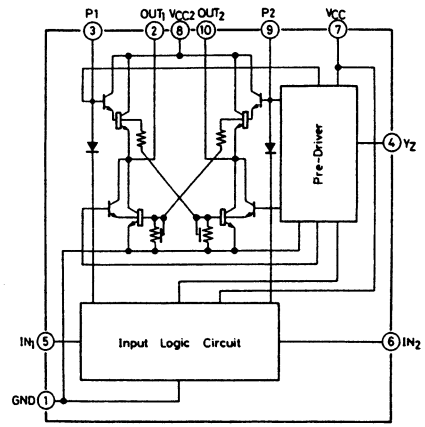


IC BLOCK DIAGRAM (AMPLIFIER)

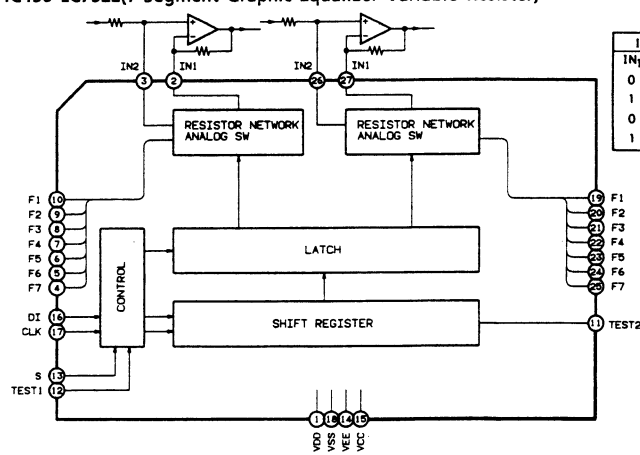
IC453 · 454 RC4558S-D(Dual Operational Amplifier) IC457 · 472



IC455 LB1641(Motor Driver)

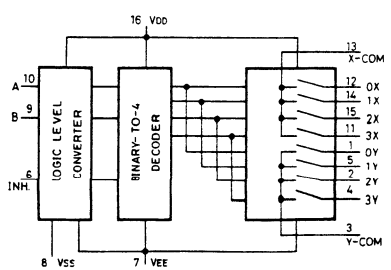


IC456 LC7522(7-Segment Graphic Equalizer Variable Resister)

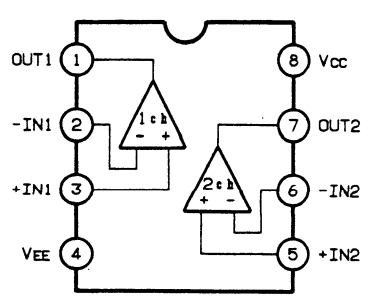


Input		Output		Action
IN_1	IN_2	OUT_1	OUT_2	
0	0	0	0	Brake
1	0	1	0	Normal(Reverse)Rotary
0	1	0	1	Reverse(Normal)Rotary
1	1	0	0	Brake

IC458 XRU4052B(Deferantial Multiplexer / DeMultiplexer)



IC460 XRA4558(Dual Operational Amplifier)

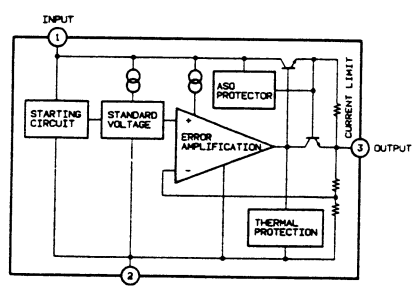


IC BLOCK DIAGRAM (AMPLIFIER)

IC459 LC66506B-4582(4 Bit Micro Processor)

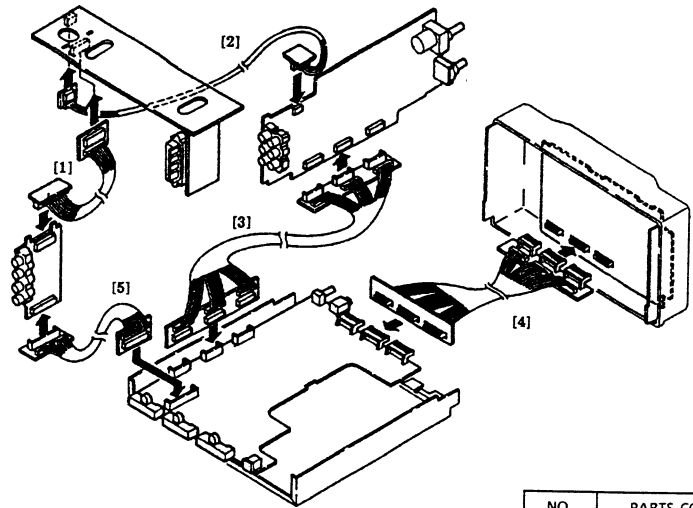
PIN	PIN NAME	DESCRIPTION	HIGH	LOW
1	L MOTOR	Motor Output for Headphone		Rotate
2	SO	Output for LC7565,LC7522 Serial Data	Trans mit	
3	CLK	CLK Output for LC7565,LC7522 Serial Data	Trans mit	
4	IR	Remote Control Input		IN
5	PDOWN	ON/OFF Input of Power Source from TUNER	ON	OFF
6	S1	Select Input of Remote Control Decord Cord		Trans mit
7	S2	Select Input of Remote Control Decord Cord		Trans mit
8	HOLD	Detected Input for Power Failure	Nor-mal	Power Failure
9	4051A	Select Output of IC4051 Audio Signal	1	0
10	4051B	Select Output of IC4051 Audio Signal	1	0
11	4051C	Select Output of IC4051 Audio Signal	1	0
12	TUPOWER	ON/OFF Output of Power Source to Tuner	OUT	
13	S6	Select Input of Remote Control Decord Cord	Trans mite	
14	S3	Select Input of Remote Control Decord Cord		Trans mit
15	TU.AF	Input of TUNER Function	IN	
16	CD.CONT	Input of CD TIMER Control	IN	
17	CD.AF	Input of CD Function	IN	
18	S4	Select Input of Display Device		Trans mit
19	TA.AF	Input of TAPE DECK Function		IN
20	POWER	Input of Procession on Power Failure to TAPE DECK		IN
21	H.PHONE	Select Output of HEADPHONE & Output of Indication LED		ON
22	SURROUND	Select Output of SURROUND & Output of Indication LED		ON
23	D'bass	Select Output of D'BASS & Output of Indication LED		ON
24		Not Used		
25	VOLUP	Motor Output for the Volume		OUT
26	VOLDOWN	Motor Output for the Volume		OUT
27	4052A	Select Output of IC 4052 Video Signal	1	0
28	4052B	Select Output of IC 4052 Video Signal	1	0
29		Not Used		
30	TEST	To Earth		
31	VSS	To Earth		
32	OSC1	CR Oscillation(4.19MHz)		
33	OSC2	CR Oscillation(4.19MHz)		
34	RES	Input of RESET	Nor-mal	RESET
35	DIG5	Input of Key(Digit Output)		OUT
36	DIG6	Input of Key(Digit Output)		OUT
37	DIG7	Not Used		
38	TAPE	Output of Indication LED of TAPE Function		Light Up
39	CD	Output of Indication LED of CD Function		Light Up
40	TUNER	Output of Indication LED of CD Function		Light Up
41		Not Used		
42	AV2	Output of Indication LED of AV2 Function		Light Up
43	AV1	Output of Indication LED of AV1 Function		Light Up
44		Not Used		
45		Not Used		
46	DIG1	Input of Key(Digit output)		OUT
47	DIG2	Input of Key(Digit output)		OUT
48	DIG3	Not Used		
49	DIG4	Not Used		
50	SEG1	Input of Key Segment		IN
51	SEG2	Input of Key Segment		IN
52	SEG3	Input of Key Segment		IN
53	SEG4	Input of Key Segment		IN
54	T.CONT	Control Input of TAPE DECK TIMER	REC	PLAY
55		Not Used		
56	SS	Select Input of Remote Control Decord Cord		Trans mit
57	SPRELAY	ON/OFF Output of Speaker Relay	ON	OFF
58	T.CSTOP	CSTOP Output of TAPE DECK (System Movement)	OUT	
59	CD.CSTOP	CSTOP Output of CD (System Movement)	OUT	
60	RELAY	ON/OFF Output of POWER Control	ON	OFF
61	∞DB	MUTE Output of ∞	OFF	ON
62	-20DB	MUTE Output of -20dB	OFF	ON
63	R MOTOR	Motor Output for Headphone		Rotate
64	VDD	VDD + 5V		

IC461 RC78M05FA / IC462 RC7812FA
(3-Terminal Voltage Regulated Power Supply)



TOOL FOR REPAIRABLE

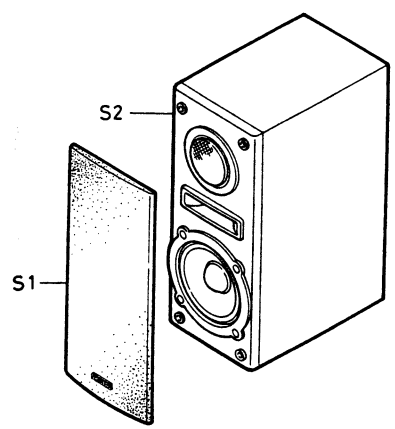
Please use the tools(PCB relay cord) for repairable.



NO.	PARTS CODE	REMARKS
1	4822 321 61332	614 231 2568
2	4822 321 61333	614 231 2544
3	4822 321 61334	614 231 2537
4	4822 321 61335	614 231 5220
5	4822 321 61336	614 231 2551

SPEAKER SYSTEM

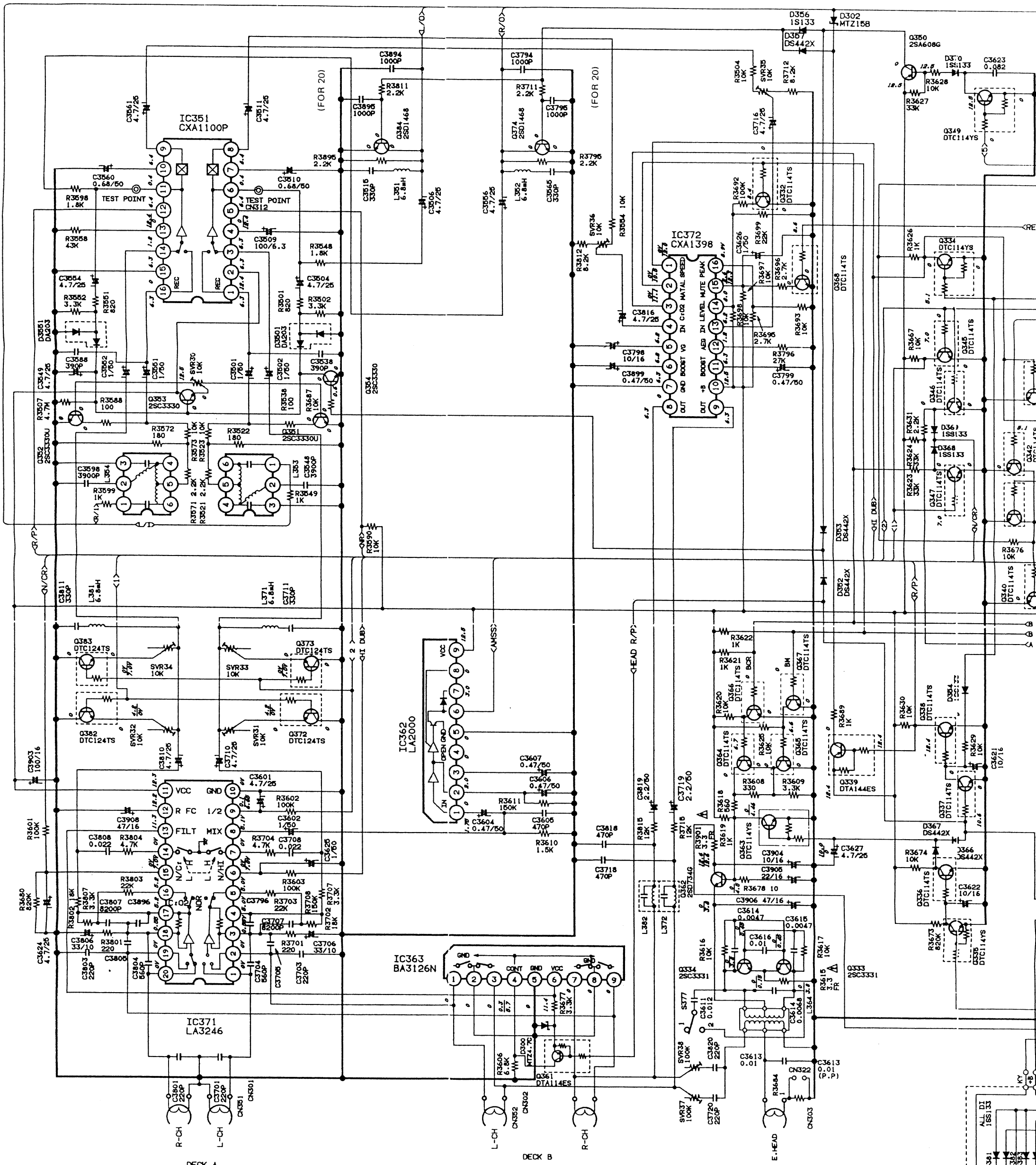
EXPLODED VIEW & PARTS LIST

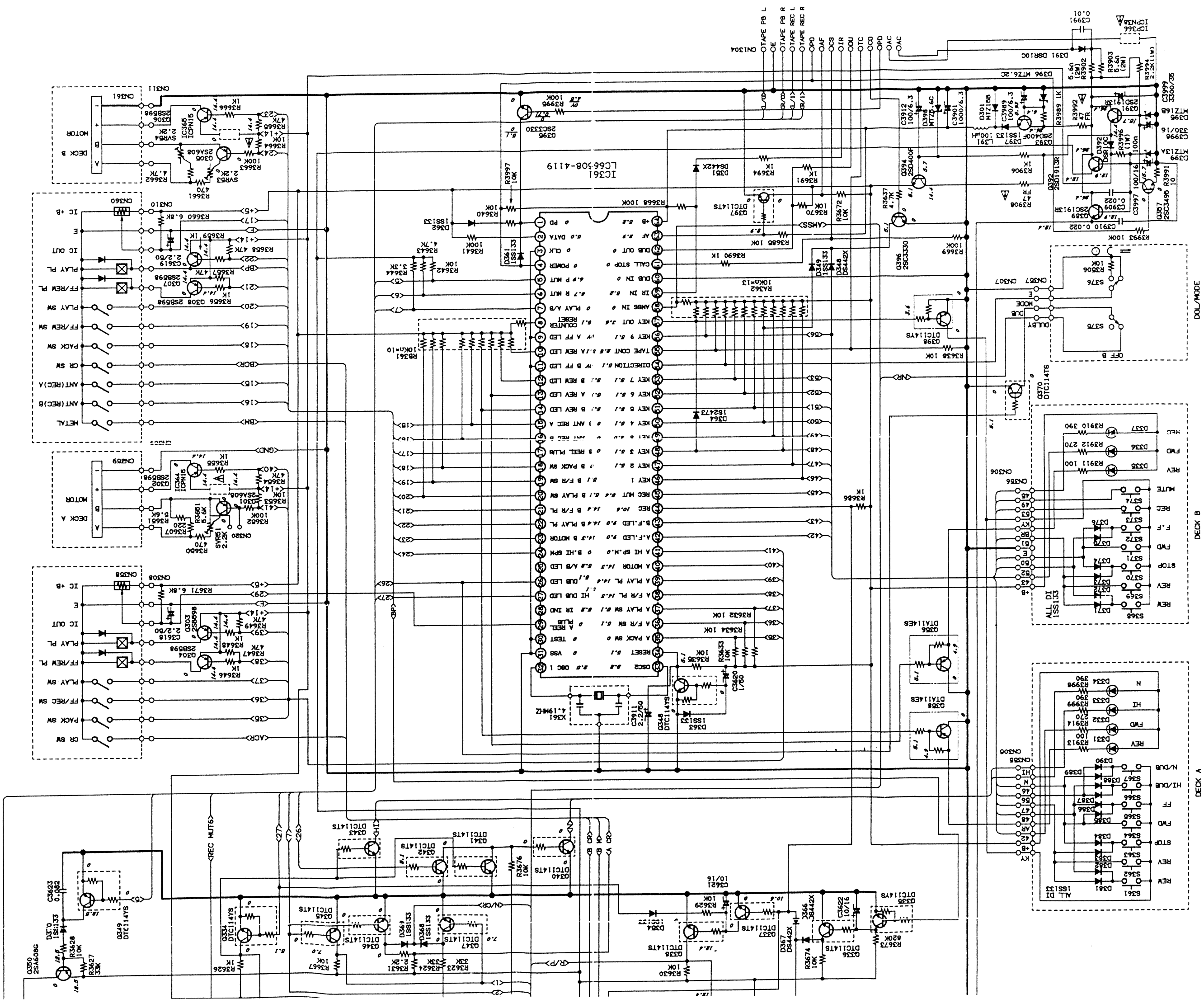


REF. NO.	PART NO.	DESCRIPTION
S1	4822 458 30617	ASSY, GRILLE
S2	4822 425 40182	ASSY, CABINET, SPEAKER

SCHEMATIC DIAGRAM (DECK)

C3705 . 3805 : 560P (FOR 20) 100P (FOR 25)
C3796 . 3896 : 100P (FOR 20) Not Used (FOR 25)




IC361
LC66308-4119
DECK A
DECK B
MOTOR
DOL/MODE
ALL DI
1SS133
REC MUT6
TAPE PB L
TAPE PB R
TAPE REC L
TAPE REC R
CN1304
CN305
CN306
CN307
CN308
CN309
CN310
CN311
CN360
CN361
CN1305
CN1306
CN1307
CN1308
CN1309
CN1310
CN1311
CN1360
CN1361